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MAKING SUPPORTABILITY A REALITY: APPLYING THE PRINCIPLES OF ORGANIZATIONAL TRANSFORMATION

by

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   This study applies change management theories and models to analyze what organizational changes will best support the DOD implementation of the Army's policy making Supportability equal to Cost, Schedule, and Performance in all acquisition programs. Post-production support factors are a major element of the total ownership cost of defense systems. The policy will save defense dollars by increasing accuracy of total ownership cost predictions in the design phase, and improve the product delivered from acquisition programs that our war fighters will use to fight wars and win.

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MAKING SUPPORTABILITY A REALITY: APPLYING THE PRINCIPLES OF ORGANIZATIONAL TRANSFORMATION

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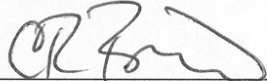Captain, United States Army
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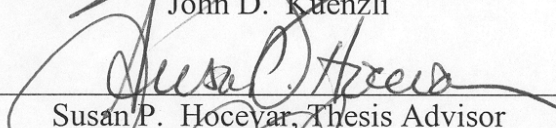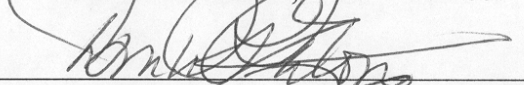Charles R. Bailey

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ABSTRACT

The cost-effectiveness problem in acquisition programs is so important to the Department of Defense, that the Army Secretariat recently wrote policy to make Supportability equal to Cost, Schedule, and Performance in all Army acquisition programs. While this policy approach to logistics support is a step in the right direction, the Army has yet to communicate the best way to implement this policy, and the other services have yet to adopt such a policy. This policy is a key Acquisition Strategy that focuses on identifying the total system cost.

The current situation is such that the services will continue to spend dollars and develop systems that will cost exponentially more in annual increases over the years the systems are in use. At best, costs are not seen until downstream or in the long-term. This causes us to spend our operations and maintenance dollars on acquisition resulted costs long after acquisition dollars have expired. If we can effectively implement the Supportability policy we will can increase supportability factors in acquisition programs, make better use of defense dollars, lower life cycle costs, and enhance the war fighters mission to carryout out our national defense strategies and initiatives.

Implementation of the Supportability policy requires transformational change in the services. This study applies change management theories and models to analyze what organizational changes will best support the implementation of the Army's policy on making Supportability equal to Cost, Schedule, and Performance. If implemented successfully, the policy has the potential to improve the products from acquisition programs that our war fighters will use, and save our limited defense dollars.

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I. INTRODUCTION

A. CHANGING TIMES.

> The Department of Defense is going through significant change--
> everything is being reduced except commitments. We are seeing profound
> changes in organizations, budgets, manpower, roles and missions,
> strategies, infrastructure, attention in the media and by the Congress and
> world crises of a different nature. We are seeing a thrust towards
> privatization and outsourcing of many traditional service functions and a
> revolution in specifications and standards with a bias toward the private
> sector in terms of more convenience for them, less government oversight
> and more influence by them. Integrated program teams are on the rise, yet
> true teaming in the "Toyota Sense" is lacking and at the same time, there
> is a disenfranchising of logistics influence. Logistics checks and balances
> such as the Navy's Logistics Review Group are being either eliminated or
> passed back to the Program Executive Officer. These changes demand
> that whatever we do in logistics, we must do right. Now, more than ever
> the culture of logistics must be changed. We must put logistics and
> logisticians in the spotlight as a science managed by professionals. The
> Acquisition Logisticians must know their business and be proactive
> visionaries who are compelling and influential in providing the best
> possible support solutions. (Eaton, 2001)

Eaton's opening quote sets the direction defense managers and logisticians must be ready to head. The Defense environment has changed and now the Defense Department and its logistics and acquisition departments must understand and address the changing environment. Figure 1 below depicts the change trend with respect to defense funding. The dollars available to defense initiatives have steadily decreased over the years. The percentage reductions amount to enormous reductions in the budgets of defense organizations. While Eaton mentioned everything is being reduced, perhaps the most difficult reduction to manage in its painful obviousness is the reduction in funding.

Figure 1 from the Defense Almanac shows the steady decrease in defense spending as a part of our federal budgets and public spending (defined as government spending) since 1965.

DOD'S SLICE OF THE DOLLAR

DEFENSE OUTLAYS AS A PERCENTAGE OF

FISCAL YEAR	FEDERAL OUTLAYS	NET PUBLIC SPENDING
2001	15.1	9.4
2000	15.5	9.6
1999	15.3	9.4
1998	15.5	9.5
1997	16.1	9.9
1996	16.2	10.0
1995	17.2	10.7
1994	18.4	11.5
1993	19.8	12.4
1992	20.7	13.1
1991	19.8	12.6
1990	23.1	14.8
1989	25.8	16.5
1988	26.5	17.0
1987	27.3	17.6
1986	26.8	17.9
1985	25.9	17.6
1984	25.9	17.5
1983	25.4	17.3
1982	24.7	16.9
1981	23.0	15.8
1980	22.5	15.3
1975	25.5	16.5
1970	39.4	25.4
1965	38.8	25.2

Figure 1. DOD's slice of the dollar (From: Defense Almanac, 2001)

The effect of those decreasing percentages of funding and the increasing pace of technology and military commitments has required the military acquisition community to find ways to meet the services' technical needs with less money to source the required initiatives. The reduced defense budget makes the costs of acquisition more important than ever. The Pentagon considers acquisition reform (lowering the costs of acquiring weapon systems) to be one of its highest priorities. In an era of shrinking budgets, the Department of Defense (DOD) plans to use the savings from acquisition reform to pay for force modernizations (GAO report #NSIAD-97-48).

B. THE SUPPORTABILITY ISSUE.

Supportability is the degree to which system design characteristics and planned logistics resources, including manpower, meet system peacetime requirements and wartime utilization requirements. (Eaton, 2001) Supportability planning is a requirement for all Major Defense Acquisition Programs (MDAPs), and budgeting for Supportability is one of the biggest challenges to identifying the upfront cost of a program. The support strategy encompasses the logistics support plan executed through the life and use of the system. Some of the areas of consideration for the support strategy and program Supportability include product support, affordability improvements, source of support, human systems integration, environment, safety, occupational health, and post deployment evaluation (DOD Directive 5000.1 and DOD Directive 5000.2). Product support is one of the most significant considerations due to the fact that it includes system reliability, maintainability, availability, and technical improvements. The possibility of cost overruns and program inefficiencies are high once a program gets into product support and other Supportability criteria. The high costs associated with Supportability and the overall Total Ownership Costs born by the military, paired with the reduction in defense budgets listed in Figure 1, are the reasons why Supportability is an important area to manage properly.

Financing the logistics after development, testing, and production remains a burden on defense logistics managers. "Military Logistics is an important and expensive job. The Defense Department (DOD) will spend about $84 billion out of its $280-billion budget (one-third) on logistics support this year. Even so, failing equipment and parts shortages continue to be a problem. DOD has taken steps to reengineer its logistics

process, but many aspects of its overall plan are incomplete, raising questions about whether or when the goals of better service and lower costs will be realized. It is too early to assess the impact that reengineering logistics support will have on combat forces" (GAO report #NSIAD-00-89).

The Logistics Support costs for any military weapon system or vehicle once fielded comprises the majority of that program's cost over its lifetime of use. (Blanchard, 1998) The costs grow higher and higher each year due to the age of the system and a lack of commitment to supportability. Supportability factors and support analysis properly and thoroughly developed during the design phase of any system can forecast the future cost of a program. If Supportability were more thoroughly addressed during design and testing, the government would reduce total ownership costs by millions of dollars after the system is fielded into the services.

Different parties will debate the causes of support related costs. Obsolescence or inadequate performance of hardware, software, and commercial off-the-shelf technology, and the rising costs of diminishing manufacturing sources and out-of-production parts are documented problems that increase support costs as our weapon systems increase with age and use. (Committee on Aging Avionics in Military Aircraft, 2001)

> Costing of logistics support programs in the outyears is nearly always an uncontrollable nightmare. However, given that the Program Manager has done his homework and required his contractors to effectively and definitively document his program from inception to demise, the follow-on logistics support of his system should be attainable as its life cycle is extended out beyond the time originally planned for obsolescence. (Case study of restarting a production program twenty five years later [author unknown], 1994)

Often a post production analysis will show that a component or system performed far below the contractor-stated reliability rates; while the contractor will defend the product and counter by professing the system was never intended or designed for the type or frequency of use experienced. This has occurred in the past with aircraft parts designed for commercial use and then purchased for use in Navy aircraft that land and take off of carrier platforms which is much more stressful on the aircraft than landing and taking off of airport or airbase runways. (Eaton, 2001)

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While support-related cost identification problems and conflicts exist, our current weapon systems continue to get older and costlier, requiring more defense dollars and delaying the procurement of newer systems. When Congress approves funding for new programs and weapon systems, the acquisition community needs to give increased attention to Supportability to properly field weapon systems that will enable the war fighter to fight wars and win at a planned and efficient cost. Without changing from the current trend, we will continue to spend dollars and develop inadequate systems (in terms of technical capability, and mechanical reliability effecting total ownership costs) that will exponentially cost more over the years the systems are in use. If we can improve Supportability and product support in the form of reliability, availability, and maintainability, we will make better use of defense dollars, lower life cycle costs, and improve the end product our services use to carry out our national defense strategies and initiatives.

C. THE ARMY SUPPORTABILITY POLICY.

Maintaining systems already in service competes against acquisition funds and maintains priority for funding over the development of new systems. These systems in use, commonly called legacy systems are what the services know they must have ready to fight at the next call to duty. Maintaining systems already in service also reminds the service managers in the logistics field that Supportability and its tenets of Reliability, Maintainability, and Availability need to be evaluated with greater degrees of certainty. Logistics managers in the field pay Supportability costs for fielded systems with Operations and Maintenance funds. Once fielded, the majority of the associated systems Supportability costs do not burden Program Managers' budgets. Lessons learned from identified avoidable post production costs led to the following excerpt from the Assistant Secretary of the Army for Acquisition, Technology, and Logistics, the Honorable Paul J. Hoeper, dated 27 February 2000:

> Defense acquisition policy holds us accountable for program cost, schedule, and performance. Army Regulation (AR) 10-5 promulgates acquisition and logistics management responsibilities that are based in Title 10, United States Code for equipping, supplying, training, and maintaining for force. These requirements mean that, at the very inception of a materiel solution idea, we must say, "Materiel developers have four,

not three, things to consider: cost, schedule, performance, **and supportability** [emphasis added].

The following is the actual Supportability policy statement the Army has adopted, as written in a memo from the Department of the Army, Office of the Assistant Secretary of the Army, Acquisition Logistics, and Technology.

> The Department of the Army holds supportability to be co-equal in importance with the materiel development considerations of cost, schedule, and performance. Accordingly, it is incumbent upon everyone involved in the acquisition and logistics processes to ensure that system supportability is fully addressed throughout the development, acquisition fielding, and utilization of the system. AR 700-127, Integrated Logistics Support, provides Army policy on supportability planning and execution. Effective supportability is integral to the success of a system. To achieve a reliable and cost effective system, supportability must be under discussion and evaluation from the very inception of the system idea. This requires materiel developers establish integrated working-level teams under their formal integrated product teams, to manage the supportability program. Additionally, Supportability analyses must be conducted as an integral part of the systems engineering process. This is to ensure supportability requirements are identified to optimize total system performance. Preparation of the Supportability Strategy (see AR 700-127) as a source document for the integrated logistics support information requirements of our program management documentation must be recognized as only the beginning of our responsibility. We have to get beyond the notion that we have addressed our supportability requirements by merely including words in a prepared document. For example, once the supportability Strategy has been approved, you have all the information you need to satisfy the support concept requirements of the Acquisition Strategy. Using the Supportability Strategy as a starting point, we must undertake the continuously refine and improve the supportability function. (Hoeper, 2000)

This policy could be used throughout the services, and if properly implemented will save operations and maintenance (O&M) dollars associated with a weapon system's total ownership costs for years to come. (Citation needed) As stated, this policy currently exists at the Department of the Army level, and some of the Air Force's subordinate agencies, but not at the service-wide policy level. This policy is needed throughout DOD acquisition if we ever wish to identify and manage total ownership costs, and stop our standard business practice of cost overruns.

It is the objective of this thesis to apply change management theories and models to analyze what organizational changes will best support the implementation of the Army's policy on making Supportability equal to Cost, Schedule, and Performance. If implemented successfully, the policy has the potential to improve the acquisition products that our war fighters will use and save our limited defense dollars. Supportability must be considered as a major element of the system if the resultant product output is to be cost-effective and meet the needs of the customer/war fighter. The resultant acquisitions will better identify the total cost of ownership.

D. HOW IS SUPPORTABILITY CO-EQUAL TO COST, SCHEDULE, AND PERFORMANCE?

Supportability is the key overlooked factor in the acquisition process. We can further acknowledge the importance of Supportability in the Under Secretary of Defense for Acquisition and Technology Honorable Jacques S. Gansler's statement before the Subcommittees on Procurement and Research and Development House Committee on National Security, Acquisition & Technology Overview, February 26, 1998:

> From an acquisition perspective, to accomplish this [provide our services the needed weapons and technology to defend our nation and win wars], we must do three things. We must modernize our current weapons systems; develop and deploy the major new systems and subsystems required for 21st century operations; and support those systems efficiently, effectively, and securely -- and we must do all three of these at lower cost and with drastically reduced cycle times.

Gansler states we must be able to support weapon systems efficiently and effectively at lower costs. This is a significant testimony as to why Supportability must be equal to Cost, Schedule and Performance in all respects. Supportability must be evaluated in program reviews in the same manner Cost, Schedule, and Performance are evaluated (Blanchard, 1998). Supportability must be represented on teams with an equal voice to Cost, Schedule, and Performance. Supportability must be looked at equally to Cost, Schedule, and Performance in all Acquisition Program Baseline documents; and the rewards structure for Program Managers as well as program members should reward

Supportability the same way the current reward system favors Cost, Schedule, and Performance (Forsberg, Mooz, Cotterman, 2000).

> Much of the downstream cost is a consequence of design and management decisions made during the early stages of conceptual and preliminary design. Thus, the supportability analysis is critical in system design and development, and the use of life cycle cost analysis methods is essential if one is to assess whether or not the system can be operated and supported in an effective and efficient manner. (Blanchard, 1998)

Supporting the systems is a critical logistics function needing as much emphasis and resources as efforts to monitor cost, track schedule, or increase performance.

E. WHAT DOES THE DODI 5000.2, DOD 5000.2-R SAY ABOUT SUPPORTABILITY?

The Department of Defense Directives 5000.1 and 5000.2 provide mandatory procedures for Major Defense Acquisition Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs. The two will be referred to from here on as the 5000 series. The procedures listed in the 5000 series are required for all MDAPS and MAIS, but are also to be taken as a general model for other than MDAP or MAIS programs. The 5000 series is a compilation of guidance from the Office of Management and Budget (OMB), Circular A-11, and current statutes.

The procedures listed in the 5000 series unequivocally require the Program Manager to address each of following: acquisition program goals, acquisition program strategy, support strategy, life cycle support oversight, supportability analysis and support concepts.

F. GOALS.

The 5000 series requires every program to establish goals consistent with Cost, Schedule, and performance. (1.1). It specifically states: "The best time to reduce Total Ownership Cost (TOC) and program schedule is early in the acquisition process. Continuous price/cost/schedule/performance tradeoff analyses shall accomplish price/cost and schedule reductions."

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G. COST, SCHEDULE, AND PERFORMANCE TRADE OFFS.

The Cost, Schedule and Performance Trade off section is a subchapter in the DOD 5000 series and focuses purely on cost, schedule and performance. This portion of the regulation further discusses "trade space" and how cost, schedule, and performance may be traded between objective and threshold parameters without Milestone Decision Authority (MDA). The regulation specifically addresses cost and states,

> Cost parameter shall identify TOC (broken-out into direct costs: research, development, test, and evaluation costs, procurement costs, military construction costs, operations and support costs to include environmental, safety, and occupational health compliance costs), and the costs of acquisition items procured with operations and maintenance funds…

The costs associated with incorporating logistics and logistics testing in program development can be large up-front costs. This makes them an easy trade off in the performance category.

H. ACQUISITION STRATEGY.

Part 2 of the 5000 series requires each Program Manager to develop and document an acquisition strategy to guide program execution from initiation through procurement of systems, subsystems, components, spares, and services beyond the initial production contract award and during post-production support. (DOD 5000.2-R, 2002). "A primary goal of the strategy shall be to minimize the time and cost it takes, consistent with common sense and sound business practices." The focus here is cost and schedule. Supportability is not even mentioned, yet it has been proved that the award cost for the system "now" is only 30% of the realized cost; up to 70% of the total cost is yet to be realized. (Blanchard, 1998)

I. SUPPORT STRATEGY.

Section 2.8 requires a support strategy and provides clear instructions for the Program Manager. "As part of the acquisition strategy, the program manager shall develop and document a support strategy for life-cycle sustainment and continuous improvement of product affordability, reliability, and supportability, while sustaining

readiness." Knowing this raises the question, "Why do we still have programs failing in performance, supportability, and cost overruns?"

J. LIFE CYCLE SUPPORT OVERSIGHT.

Section 2.8.6 requires the support strategy to address how the program manager and other responsible organizations will maintain the proper oversight over the fielded system. The oversight is required to identify and properly address performance, readiness, ownership cost, and support issues. The oversight shall include post deployment evaluation to support planning for assuring sustainment and implementing technology insertion for continuous improvement; however, once the program manager awards the contract, he or she is relieved by a new program manager and is no longer associated with the project. Thus, the same program manager who was responsible for the system through its development does not maintain the life cycle oversight after program award.

K. SUPPORTABILITY ANALYSIS AND SUPPORT CONCEPTS.

Program managers are required to conduct acquisition logistics management throughout the program life cycle in a cost effective manner. They are required to conduct a supportability analysis to achieve cost-effective support throughout the system lifecycle. The system's total ownership cost is to play a key role in influencing the overall selection process. Support concepts for all systems shall provide cost effective, total-life-cycle, logistics supportability. (DOD 5000.2, 2000).

L. SUMMARY.

What we desire is an acquisition system that promotes and rewards maximum reliability, sufficient budget for full funding (design to disposal), and an organizational structure that incorporates and addresses the need for effective and efficient Supportability and program performance. This thesis will identify specific organizational changes that must be addressed if our defense acquisition community is going to effectively implement Supportability. We will address these fundamental organizational issues briefly from the policy level where rules and regulations are created, and in depth

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at the implementation level within the program environment. Our analysis will use organizational management and change management tools to understand the breakdown in Supportability, and methods of changing the current situation. We will address implementation of the Army Supportability policy for DOD-wide use. Our focus is on how get "there" from "here," by framing these issues with organizational models and using a logistics lens to capture the successful blend of tools needed to successfully implement the Army policy.

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II. THE BECKHARD AND HARRIS MODEL OF CHANGE
MANAGEMENT

A. THE BECKHARD AND HARRIS MODEL.

Many models for organizational change exist. Some change models resemble strategic planning. Some are tailored around specific functions, processes, or root causes symptomatic in many of today's organizations. The change model selected for this study is presented in <u>Organizational Transitions, Managing Complex Change.</u> (Beckhard & Harris, 1997)

In their book, Beckhard and Harris discuss pressures for change that commonly influence many organizations. They also present guidelines for the effective implementation of change that can be applied by any particular organization facing the pressures of change. The Beckhard and Harris model is a model that tries to represent real challenges to organizations in today's world.   The authors discuss many of the factors experienced by leaders and managers of many organizations. Beckhard and Harris present a simple model that can be applied to any organization, public or private during periods of changing conditions. The model is actually presented as a map to direct leaders through the required changes. The map then can be turned into a process outline for influencing action plans, execution, and desired outcomes. The map begins with developing an understanding of the organizational internal and external situation and concludes with developing a plan that becomes strategic and tactical in nature, and assists managing the implementation of changes to improve chances of successful organizational change. Figure 2 presents the model map of the Change Management Process presented by Beckhard and Harris. This model will be discussed in detail for application in this study, and to present readers with a basic understanding of the diagnostic approach used to arrive at the conclusions and recommendations at the end of the study.

Why Change?

Determining the need for change

Determining the degree of choice about whether to change

Describing the present state

Defining the desired future state

Getting from here to there:

assessing the present in terms of the future to determine the work to be done

Managing during the transition state
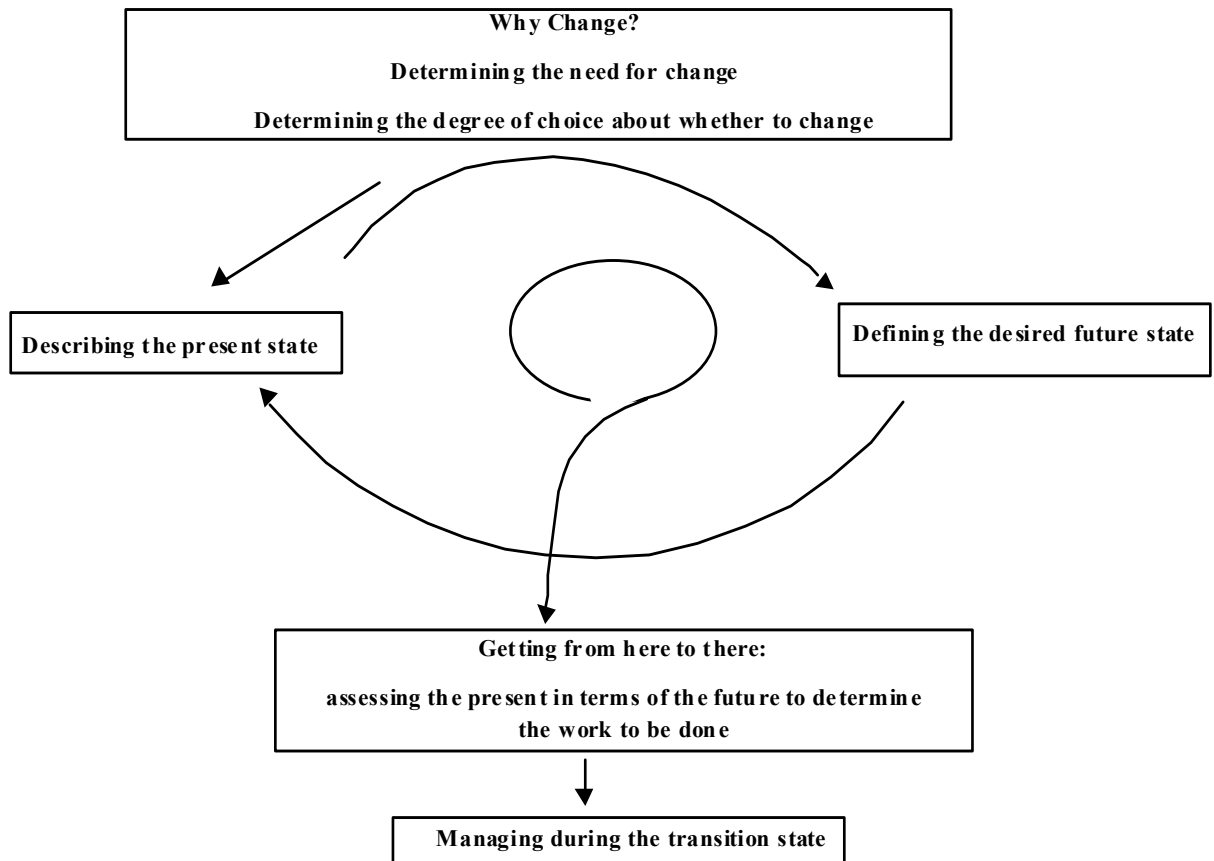
Figure 2. Map of the Change Management Process

B. WHY CHANGE?

Beckhard and Harris address organizational challenges involved with change and the dilemma of balancing change and stability. These challenges include, but are not limited to, organizational downsizing, changes in ways of doing business, and changes in the culture of the organization. These and other pressures on the organization provide the answer to the question, "why change?" which is the first stop on the map. The map

begins by requiring leaders to understand why change occurs, understanding why organizations need to change, and the choices leaders have regarding changes. More specifically the map requires leaders to look at the forces impacting their own organization and how those forces might provide a direction for change.

The reasons for change can be identified from circumstances as direct as a new governing mandate, or regulatory changes handed down to an organization that requires change to occur; or forces for change may be indirect and slow developing. Indirect influences can be identified through internal and external analyses of the organization, organizational SWOT (strength, weaknesses, opportunities, threats) analysis, or stakeholder analysis. Regardless of the methods used, once the reasons for change are identified, leaders can begin to form or see the vision of what the organization is to look like following change. The reasons for change do not necessarily depict what changes will take place within the organization, but rather what capabilities the organization must present or perform, and what operating conditions the organization must survive in. Properly identifying the reasons for change will direct the size of change, or the number of choices leaders may have about whether to change or not, and to what degree.

The operating conditions driving the reasons for change, as well as the present state of areas, sections, departments, or parts of the organization considered for change, can define a set of constraints that shape leadership's view of the desired future state. This is important to understand. Leadership may plan desired changes to fit within the constraints and available resources. If they can properly identify the constraints, the leadership will not be as likely to ask for something unattainable. However, if "real" constraints are not identified, the leadership may create a vision of drastic change that cannot actually be obtained. It is also possible that a change plan overly emphasizing constraints can be too conservative and end up with a sub-optimized solution. If a largely unconstrained change plan is pursued it can dramatically change the organization and actually influence further change in the operating environment. This less constrained approach can potentially lead to further continuous evolutionary change. Understanding the real reasons for change, and the framework for understanding what those changes will look like, lead to the next two stops on the map: describing the present state and defining the desired future state.

C. DESCRIBING THE PRESENT STATE AND DEFINING THE DESIRED FUTURE STATE.

In this model, the organization leadership is expected to recognize how the current organization improperly fits in the new operating conditions defined in the "why change?" block. The next step in the process requires the ability to envision what the organization looks like in the future once change has occurred to create stability in the anticipated future environment. The next two blocks on the map further this process by requiring leadership to describe the present state, and define the desired future state.

Defining the present state can be done many ways. The organization's leadership may define the present state by statistical results found in financial reports, market shares, or other business performance measures. In the past, organizations have defined their present state by conducting meetings or discussions with employees to identify their problems or challenges. Previously mentioned SWOT assessments can be conducted to identify the strengths and weaknesses, opportunities and threats facing the organization that define the present state and the constraints facing the organization. Figure 3 is adapted from Concepts of Strategic Management. The diagram depicts what a usable SWOT analysis can look like.

Strengths
Operator/customer visibility and feedback   Independent testing for operational suitability
Logistics support must be satisfied to proceed to next milestone   Logistics Advocates

Opportunities
The program is given high priority

Strong backing from customers

Strong backing from Congress

Cancellation of competing programs

Threats
Change in priority

Cost growth

High technical risk

Poorly managed changes

Diffused and disparate responsibilities; no central focus

Conflicting roles

	Strengths	Weaknesses
Opportunities	Strategies to take advantage of strengths to seize opportunities	Strategies that counter weaknesses by selecting opportunities
Threats	Strategies that take advantage of strengths to minimize threats	Strategies that minimize weaknesses and avoid threats

Weaknesses
Logistics inherently weak because the acquisition system does not reward fully funded logistics
Program managers are rewarded for lowest cost, meeting schedule, and maximizing performance
Logistics support programs lack unity of purpose, a central theme, and are rife with sub-optimal goals
Logistics share of general program resources is small

Figure 3. SWOT Assessment (After: David, 1997)

While SWOT assessments were mentioned as a tool to identify "why change?" they can also assist in describing the future. Once a SWOT assessment identifies the organization's strengths, weaknesses, opportunities, and threats, the reasons for change become evident [to capitalize on opportunities and decrease vulnerabilities to threats] as well as the strengths and weaknesses that describe the condition of the organization at the present. Following a successful SWOT analysis or other similar useful tools, an organization's leadership can describe the present state and identify areas of opportunity as well as areas to avoid. SWOT analysis can be accomplished by using any of several models dealing with organizational management theories such as the organizational systems model (Nadler & Tushman, 1980) which looks at organizations structure, culture, rewards, personnel, and technology to assess congruence within the workplace,

as well as actual outcomes and outputs relative to the inputs and desired outputs of the organizations leadership. This model will be elaborated further in Chapter IV.

Defining the future state involves knowing what performance criteria are required for the organization and how the leadership sees the organization performing the required tasks to meet those measures. This may require reestablishing core competencies or mission statements. Scenario writing may become involved as leadership tries to picture what the new organization looks like, performs like, and requires of resources, technology, and personnel. Figure 4 shows the Change Management Process (Beckhard and Harris, 1997) steps of describing the present state and defining the future state. This time, the diagram includes considerations for leadership at all stops on the map.

In the matter of describing the present state and defining the future state, the diagram has arrows pointing towards each other. The arrows on the diagram pointing from one block to the other make the two interdependent upon each other. The encircling arrows and middle loop leading to the next block downward on the map imply that continuous assessment must take place between the current organization and the desired future state depicted in the leadership's vision. This continuous assessment and feedback is critical to the successful transition from current to desired future state. Upon identifying the reasons for change and the pressures for change, a manager may see hindrances in the current organization that lead to a partial definition of the desired future state. This vision of the future would define how the organization would operate once the hindrance has been removed or the identified problem solved.

Likewise, the leader may have a vision of the organizational end state, then overlay that onto the current organization structure and see the areas requiring change. An example of this would be in the United States' efforts for National Missile Defense. A potential threat drives the President and supporters to obtain a National Missile Defense capability. The National Defense System does not yet exist, but the end state vision is clear. With the end state requirement clearly defined, defense leaders and defense industries begin working to find technical and tactical solutions to change America into a nation capable of protecting its assets from a ballistic missile attack. While America still does not know exactly what the path towards change looks like, changes are happening to reach the desired end state.

Finally, as you follow an actual circle around and around, the analysis of the differences between present state and desired future state may entail a series of "if-then" questioning, back and forth between the present and the future, that gradually shapes the areas and types of change the organizational leadership will pursue.

Figure 4 shows the Change Management Process depicted by Beckhard and Harris with many of the considerations involved with describing the present state and defining the future state.

D. GETTING FROM HERE TO THERE.

Once the desired future state is obtained and the required changes from the present state are identified, a plan for successful change must fall out from the middle of the two blocks, as is shown on the map. This requires defined and usually quantifiable terms to measure the present state in terms of the future. Figure 4 shows some of the areas Beckhard and Harris identified to influence the process of "getting from here to there."

The "getting from here to there" block on the map will involve the majority of this study. To provide guidance to change planning, specific organizational management theories and models will be applied. These models include, for example: congruency (Nadler and Tushman,1980), expectancy theory (Wagner & Hollenbeck, 1998), and reward mechanisms (Kerr, 1995) . Organizational processes (Garvin, 1998), structure, teaming (Forsber, et al, 2000) roles, responsibilities, and tasks can be analyzed for their part in the organization's future state and the required changes to get members in the organization to effectively operate within the parameters of the future state. This portion of the change management process must be carefully planned and thought through. Strategic and tactical planning in the "getting from here to there"stage will present a large indicator of successful or unsuccessful change implementation. This plan must be detailed, measurable, and have a deliberate action plan that will be followed during the transition from current to future state of the change management process.

E. MANAGING DURING THE TRANSITION STATE.

Management tasks during the transition state of the organization requires following the action plan devised in the previous stage, and identifying reactions or degrees of success or failure. Assessment must be continuous to keep change occurring in the desired direction and results. Upon identification of critical success criteria, the organization's leadership must identify changes to meet those criteria. A critical element in implementation is the development and use of measures that are aligned with criteria so organizations can monitor progress towards the desired future state.
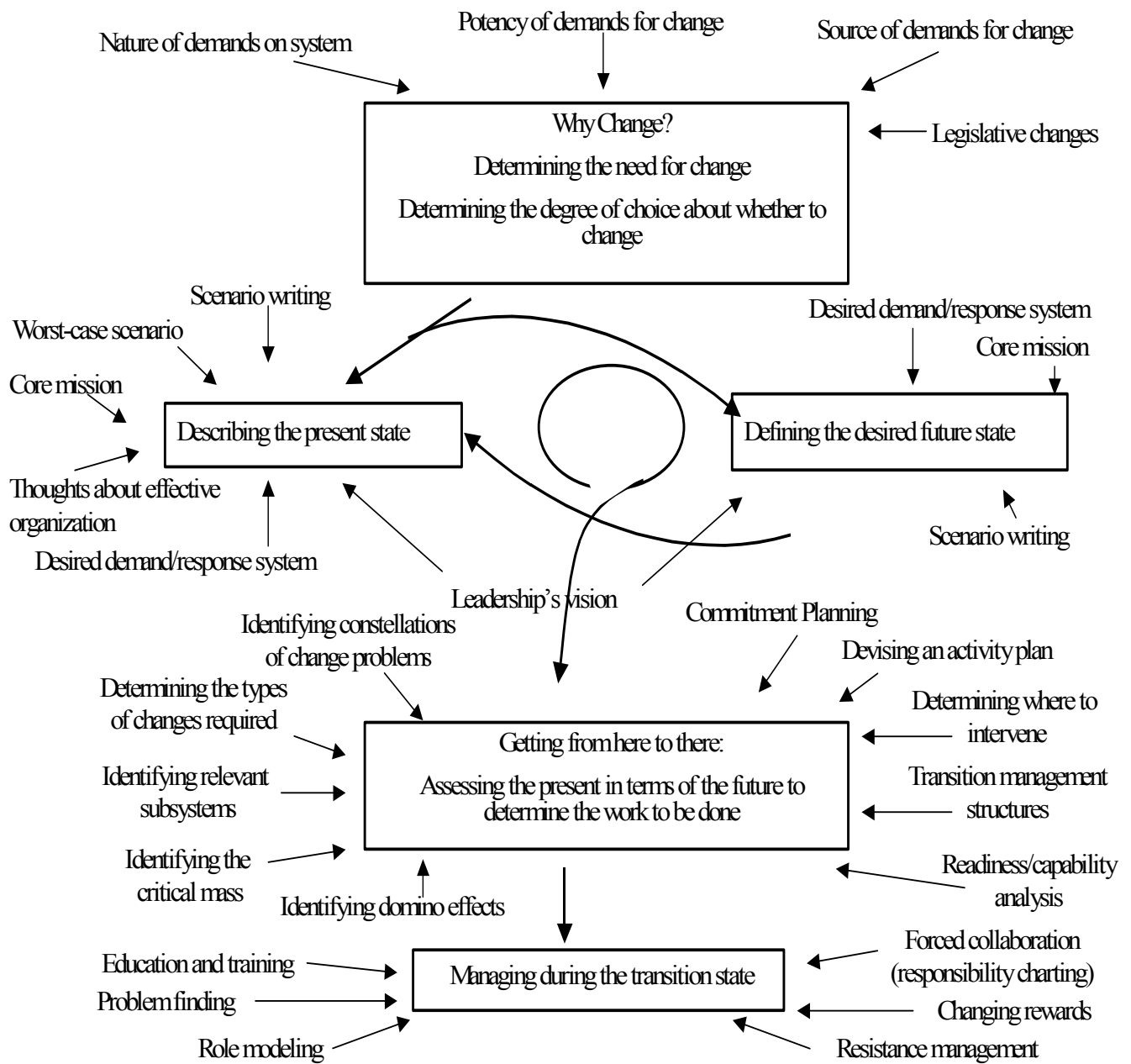
Figure 4. The Change Management Process (After Beckhard and Harris, 1987)

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III. THE NEED FOR CHANGE

A. OVERVIEW.

The Beckhard and Harris model, previously discussed, requires organizations to understand the external forces influencing change in our operating environments. It also requires organizations facing change to describe the present state; and as closely as possible, define the desired future state. All of these organizational analyses help to define why and where change is needed. In this chapter, potential areas of opportunity will be identified for change to improve the Supportability policy implementation. Upon identifying the target areas for change, further study will follow the Beckhard and Harris model and other relevant theories and models to analyze those identified areas and provide recommendations to assist the Supportability policy implementation.

The Supportability policy drives defense acquisitions towards cost effectiveness. In addressing the issue of cost effectiveness, it has been argued that there is a lack of Total Cost Visibility. This is illustrated by Blanchard's "iceberg model" (1998), which depicts cost of development and manufacturing to be only the tip of the iceberg, while the rest of the lifecycle costs are hidden under the water and represent a much larger portion of the entire iceberg. For many systems, the costs associated with design and development and initial procurement are well known. We make decisions on the cost of these items on a regular basis. However, the costs associated with support of the system throughout its planned life cycle are hidden. In the past decade, systems have been modified to include the "latest and greatest technology" due to pressures from Congress, GAO, and Acquisition reform. The downstream cost impacts are losing visibility. These "hidden costs" of operation and maintenance (supportability) are as high as 75% of the total life cycle costs (Blanchard, 1998).

To better understand the scope of the problem surrounding the implementation of the Supportability policy, we researched past Congressional transcripts, Government Accounting Office studies, and conducted interviews with both military and civilian personnel within prominent materiel, systems, and operational commands in the field. During the interview, we introduced the fact that the Army has promulgated a new Defense Acquisition policy mandating that Supportability Co-Equal with Cost Schedule,

and Performance, and asked the question: What are the problem areas/barriers to accomplish the policy? Of all people interviewed, we chose the responses from five of the twenty-five individuals that targeted specific barriers applicable to change management theory. Archived reviews and interviews that highlight specific areas that require change planning follow below. The subsequent chapter will further develop these topics and illustrate the application of relevant theories and models to change planning that can facilitate the accomplishment of policy.

B. EVIDENCE OF A DEPARTMENT OF DEFENSE NEED FOR THE SUPPORTABILITY POLICY.

The Department of the Army realized the need for changes to produce more cost-effective acquisitions when they created the Supportability policy. However, the problems leading up to the creation of the Supportability policy are not unique to the Army. Mr. E.C. "Pete" Aldridge, Nominee for Under Secretary of Defense (Acquisition, Technology and Logistics) testified in front of the Senate Armed Services Committee on April 26, 2001. He identified two key priorities:

- To Achieve Credibility and Efficiency in the Acquisition and Logistics Support Process." He stated, "Too many cost overruns, schedule slippage, and performance failures have deteriorated our credibility…

- To Revitalize the Quality and Morale of the Acquisition Workforce. The morale of our acquisition workforce, military and civilian, is low; some of our best people are leaving and we cannot recruit good people as replacements in the numbers we need. The average age of the workforce is growing and 50% of them will be eligible for retirement in the next four years. We need to let this workforce know how valuable they are and how much they are appreciated.

The first goal stated by Aldridge alludes to two areas for concern. The first goal mentioned cost overruns and the credibility of the defense acquisition community. Avoiding cost overruns while providing our military with reliable weapons is precisely the intent of the Supportability policy. Understanding the conditions that have led to cost overruns in the past will be a critical step in understanding conditions required to

successfully implement the Supportability policy. This policy reflects the cause and effect relationship between supportability and post-production cost over runs. We have historically committed larger portions of our defense budgets to sustain systems with poor Supportability factors.

The fact that Aldridge believes credibility deteriorated, suggests a gradual decline in trust over time. How is credibility deteriorated? One possible explanation is the history of programs that have been sold to Congress as something DOD needs and would only cost a certain amount; and then in later years were found to be much more costly, and questionable in performance. Over time that historical performance impacts the culture inside and outside the acquisition community. Therefore, Mr. Aldridge's goals point out the need for change in the Department of Defense acquisition communities, and address reasons for cost overruns, and declining credibility.

The second goal described a need to "revitalize" the acquisition workforce, and improve the overall morale in order to stop the loss of employees currently experienced by our acquisition communities. Revitalization has many smaller issues worth discussing. What does Aldridge mean by "revitalizing?" What caused the workforce to become discouraged to the point that morale declined and workers started leaving, with no new or young workers entering the system? When something needs to be revitalized it generally means it needs new life, energy, or new inputs to continue actions. The need for revitalizing suggests the current workforce is simply spent, or worn out and has little left to provide any new energy. This could be caused by cultural degradation, lack of congruency [how well components fit together] (Nadler & Tushman, 1980), insufficient compensation (Kerr, 1985), or inefficient work processes (Garvin, 1998) that simply waste so much of people's time and energy that the current workers simply stop trying to improve the system.

If Aldridge's testimony is accurate, then the successful implementation of new policy will require the support of a revitalized workforce and efficient programs that prevent cost overruns and gain credibility of our acquisition community. Without addressing Aldridge's stated problems, the organization will have little chance of revitalizing and will have low probability for gaining credibility.

C. OTHER VIEWS IDENTIFYING NEEDS FOR CHANGE.

Additional issues requiring change were identified through interviewing twenty-five people throughout DOD (three major systems commands, one operational command, and one maintenance command) in pay-grade levels ranging from O-5 and O-6, and GS-14. Interviews conducted telephonically lasted approximately 30 minutes in length. Other interview information came back in the form of electronic mail. In interviewing managers at different levels, we asked what they saw as major trends or obstacles affecting supportability and the possibility of successfully implementing the Supportability policy.

A military grade O-6 comptroller from one of the DOD's major systems commands responsible for the oversight and funding of acquisition programs stated the following:

> There is zero to negative government commitment [to acquisition programs]. PMs will do anything to get their foot in the funding door [a camel nose] to get agencies, and congress to invest in it. Once the system has had enough investment, there is no turning back because you have invested too much money to turn back on it now.

From personal experience he believed that if the appropriations committees knew of the total cost picture from the onset of the program, that it would never get off the ground. Additionally, he discussed rewards and incentives for the PM. He said that once a program has been officially approved, that the incentive for the PM is the timely award of a cost conscious system [cost, schedule, performance]. He said that there is no incentive for the PM to be efficient. There is no monetary incentive or profit similar to that given in the private sector.

Discussing later implications he stated, "Then the system is fielded and all hidden costs of support become visible. The systems now eat into our operating funds at the cost of other programs. The logistics or supply support folks field the blame for supporting a system that was doomed from the beginning. The logistician becomes the fall guy." He went on to say that this has become an accepted practice, which can reflect upon the culture and context inside and outside the organization.

The above statements from the systems command comptroller depict a live animated, out-of-control situation, referring to the nature of the beast and eating out of

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operating funds. The continuing problems seem so significant that they have taken on animal like characteristics of monstrous proportions. Nevertheless, these problems can be dissected to identify smaller contributing problems with potential solutions. Like Aldridge's statement, the comptroller mentioned cost overruns. According to the O-6, the program manager had two major functions: develop the program appropriated by Congress or other subordinate approving authorities, and get it delivered to the war fighters. Once delivered, the PM moves onto the next acquisition program. It is after the time of delivery and during the postproduction phase of support [supportability function] where the majority of the costs actually become known. These modifications are extremely costly.

When we asked the comptroller how we could demonstrate the significance of cost differences that surface from the delivery through fielding of the system, he said:

> Every system has a mandatory acquisition review from the Office of the Secretary of Defense (OSD). If you were to pull up any program review and look at the cost of the project now as to what was forecasted 6 years ago, I bet you will find a much larger and significant total project cost than what was predicted.

Adding to the argument, an O-5 select, Maintenance Officer from an Aviation Squadron stated,

> The system has created a short term focus. There is no long-term total program focus. The PM is rewarded or evaluated for cost [at delivery] and measures of cost, but should be evaluated for total cost. Total cost…the life cycle cost. We spend too much time evaluating the current cost and not the TOTAL cost created through the support phase.

Understanding how to change or reverse this patterned chain of events would be a significant step in improving the chances for implementing the Supportability policy. The comptroller's comments suggest that we have a culture and reward system that promotes a short-term focus and a lack of accountability for long-term outcomes. If the Program Manager continues to be rewarded only for program award and delivery then there is no reward incentive for the quality of the product or success of the program in following years. Therefore these interviews suggest there are inadequate control systems or rewards for treating Supportability with the same emphasis as initial stated cost or schedule. Even the realized cost at time of delivery, which is likely to exceed the initial

stated cost, is going to be less if Supportability is left undisclosed, and therefore will be favored by Program Managers that are being rewarded for cost at delivery. Once again, as the comptroller stated, after the system is delivered, "the logistician is the fall guy."

D. TRADE-OFFS SEEN AS A MEANS TO OBTAINING RESULTS WITHIN CONSTRAINTS.

An O-5 at one of the systems commands gave further insights as to some of the acquisition problems that have to change for the Supportability policy to be successful.

> Trade offs. The biggest trend I notice…would be the elements of logistics that are traded off… Because of the fiscal constraints placed on the development, trade offs in logistic elements become a reality. If you do not have enough to buy the number needed you trade or make concessions in order to achieve those performance specifications required for delivery.

This statement suggest that costs identified to improve reliability or reduce failure rates are avoided to keep more money available for other performance specifications like speed, accuracy, lethality, and other advanced technical capabilities. It is possible that Program Managers would address Supportability if they had enough time and money to finance the costs associated with reliability tests and evaluation, logistics support analysis and logistics support plans that are additional costs to the program during the development phases. An O-3, F-18 Aviator from a Strike Squadron added from the field,

> Money from an operator's perspective always sounds like it would fix anything. But the fact of the matter is that…we are using operating dollars to pay for the mistakes made at the acquisition table. We just don't have enough, or often not enough of the right color of money to keep operations and maintenance going.

This aviator provides a picture of the outcomes associated with trade offs due to financial constraints. In this situation finances and budget control are a significant resource constraint to the Program Manager that must be addressed for Supportability to have a chance for success.

E. ORGANIZATIONAL STRUCTURE ISSUES WITH IMPLEMENTATION.

One O-5 financial officer mentioned an issue created by the structure of our systems command matrix organizations:

> The logistician on the Integrated Product Team (IPT) works for his functional department [sometimes called competencies] and works for the Program Manager. The logistician, as a member of the IPT, works for the Program Manager but has a performance evaluation written by the department or competency head. The Program Manager provides input for the evaluation.

This creates a situation where may be in the logistician's best interest is to appease the Program Manager, who is providing the input to the logistician's performance evaluation. The weapon system may have significant problems from a logistics perspective. However, the logistician on the team may not raise the issue if addressing the issue is going to cost the program money and time, and put the logistician in an unfavorable situation with the program manager who has already conceded to logistical support trade offs, and is now trying to get the weapon system delivered. This provides visibility on a potential organizational structure problem that may be an obstacle to the Supportability policy.

F. CULTURAL AND POWER CONFLICTS.

Lastly, in addressing the membership on the IPT, the O-5 financial officer suggested a cultural or power base problem might exist. "If a logistician is not an engineer or has little time in the organization, they will not be heard. Experience [recognized as time spent in the organization] is listened to…The [IPT] members from these functional departments that make up the [IPT] team have usually been around a long time." The statement leaves uncertainty to whether the logisticians are faced with a situation where they have little experience to bring to the system, or whether there are political forces used to keep the logisticians quiet while other aims are met. The O-5 (select) from the Aviation Squadron added, "The Competencies are rightly named because they are your power base. They [the senior department or competencies] have the most experience and knowledge." The previous quote refers to the existence of an informal organization or an informal leader with perceived expert, legitimate, and even

referent power that exceeds that of the Program Manager or the Supportability lead. Thus, attention must be paid to informal sources of power and how that may influence appropriate attention to supportability.

G. EFFECTIVE COMMUNICATION AND A CHAMPION TO SPEAK OUT.

Two additional issues that were briefly mentioned in the interviews were communication and the turn-over rate of program managers. The main idea behind the two was that Supportability would not be successful until someone with a significant power base and longevity in a position of power properly communicates the need for it. The turnover factor of the program managers and the roles and responsibilities of a program manager suggests that the champion must be someone other than program managers. A champion should be someone at the policy level that can communicate the problem and direction, as well as influence the activities of subordinate agencies.

While Aldridge identified a need for the defense acquisition community to improve its credibility, the interviewed O-5s identified a need for logisticians to improve their credibility within the acquisition community itself. This has to be addressed in a manner that improves the position of the logisticians assigned to IPTs, and does so without making others feel threatened. The interviewees also identified the need for a Supportability champion to carry the issue to the stakeholders that provide the resources. This champion has to be able to communicate the needs in a manner that obtains resources but does not threaten the current champions driving technical capabilities.

Referring back to Figure 3 in Chapter II, management of the transition state is the last major component to Beckhard and Harris' change management model. With the same regard for Supportability, there needs to be a deeper understanding of the issues to be resolved in the policy action/implementation plan. The identified issues that present potential obstacles to successfully implementing the Supportability if adopted throughout the Department of Defense are:

1) Obtaining organizational balance and effectiveness within resource constraints
2) Rewards and incentives facing program managers
3) Organizational structure of systems commands

4) Power bases

5) Effective communication in change management

6) How to measure Supportability policy effectiveness and create accountability

7) A Supportability champion

8) Motivation and morale of the acquisition workforce

9) Credibility of acquisition members with the community and its stakeholders

10) Culture

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IV. ANALYSIS OF IDENTIFIED PROBLEM AREAS AND POSSIBLE COURSES OF ACTION

The previous chapter concluded with a listing of identified areas posing impediments to effective Supportability policy implementation. In this chapter we will apply various management theories to these issues in order to provide guidance for change action planning. Incorporating these considerations into the Beckhard and Harris model will assist in identifying how the organization "gets there from here." Following theory application, we will present courses of action to consider as possibilities for change that can improve our defense acquisition community and the chance for effective implementation of the Supportability policy throughout DOD. The identified issues presented again are the following:

1) Obtaining organizational balance and effectiveness within resource constraints
2) Rewards and incentives facing program managers
3) Organizational structure of systems commands
4) Power bases
5) Effective communication in change management
6) How to measure Supportability policy effectiveness and create accountability
7) A Supportability champion
8) Motivation and morale of the acquisition workforce
9) Credibility of acquisition members with the community and its stakeholders
10) Culture

Issues 8, 9, and 10 will be addressed at the end of the chapter as they are influenced by, and often a result from the seven preceding issues.

A. OBTAINING ORGANIZATIONAL BALANCE AND EFFECTIVENESS WITHIN RESOURCE CONSTRAINTS.

As organizations identify constraints that provide the boundaries they cannot go beyond, how well the organization optimizes performance within those constraints determines success. Some of the quotes provided in Chapter III suggest that simply throwing more money at programs will make them all successful. With more money

programs could afford more labor, more testing, more research, and the list would probably continue. The harshness of reality is that the financial resources are limited in amount, method of obtainment, and method of spending. Congress passes down these constraints. Congress is not likely to change due to a program level organization request. Program managers can send their input and requests for budget resources, but once the dollars are allocated, there is little else the program can do, but work within those resource constraints. In this situation, the successful program and program manager will figure out how to find success within the given resources and constraints.

Analyzing the organization for congruency or fit can identify much of the indicators of success. Nadler and Tushman present a Congruency model that assists in analyzing organizational "fit" or congruence.

> The basic hypothesis of the model, which builds on this total state of congruence, is as follows: Other things being equal, the greater the total degree of congruence or fit between the various components, the more effective will be the organization--effectiveness being defined as the degree to which actual organization outputs at individual, group, and organizational levels are similar to expected outputs, as specified by strategy. (Nadler & Tushman, 1980)

Figure 5 represents the model taken from Nadler and Tushman and presents a visual picture of the interaction among the elements of the organizational systems model. The congruency model and hypothesis dictate that there must be appropriate fit between the blocks where the arrows connect them. The organization will succeed to the degree there is acceptable balance and fit between organization elements represented by the blocks. The problem analysis steps to identify and resolve "incongruencies" within this model are the following: identify symptoms, specify inputs, identify outputs, identify problems, describe relevant components of the organization, assess the congruence and various fits, generate and identify causes, and finally identify action steps.

Environmental
Resources
History

Inputs

Transformation Process

Strategy

Information
Organization

Formal
Organization
Arrangements

Task

Individual

Outputs

Organization
Group
Individual

Feedback

Feedback
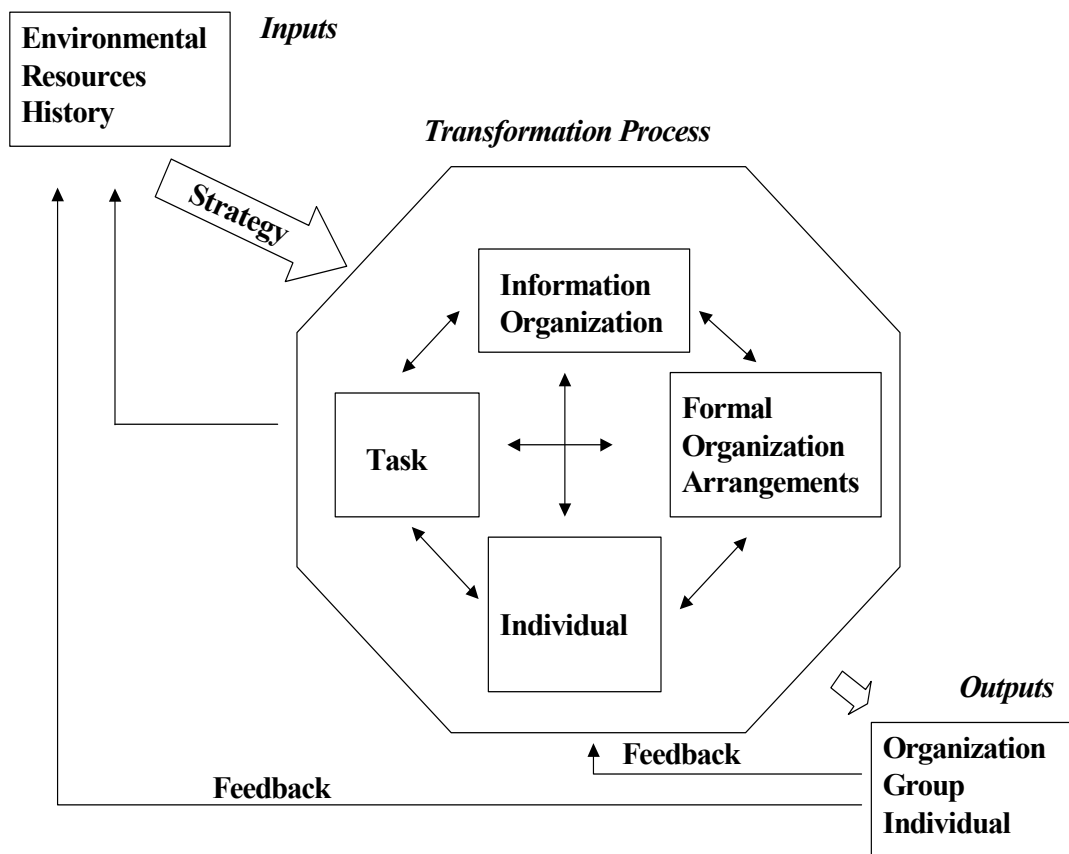
Figure 5. A Congruence Model for Organization Analysis (From Nadler and Tushman, 1980)

While all steps are required to successfully apply this model, assessing the Congruence or various fits among system elements, which makes the congruency theory meaningful. Nadler and Tushman provide the following relationships requiring fit for organization success:

1) Individual/Organization. How are individual needs met by the organizational arrangements? Do individuals hold clear or distorted perceptions of organizational structures? Is there a convergence of individual and organizational goals? The measure of fit here can apply to the extent to which: individual needs or career interests are being satisfied by the organization; the organization is getting the desired work performed by the employed individuals; or the individual filling positions of increasing importance to

the organization in terms of values and needs of the organization that go beyond physical tasks.

2) Individual/Task. How are individual needs met by the tasks? Do individuals have skills and abilities to meet task demands? Simply described, is there too much work to be done for the number of personnel available? If there is, the individuals might become depressed, dissatisfied, or overly stressed possibly leading to further problems for both the organization and the individuals working in the organization.

3) Individual/Informal organization. How are individual needs met by the informal organization? How does the informal organization make use of individual resources consistent with informal goals? Are the values of the individual aligned with the values, norms, and culture represented by the informal organization?

4) Task/Organization. Are organizational arrangements (i.e., structure) adequate to meet the demands of the task? Do organizational arrangements motivate behavior that's consistent with tasks demands? The task to organization fit is similar to the individual to task fit, except it now looks at the jobs required, work technology, and the entire organization's ability to succeed.

5) Task/Informal organization. Does the informal organization (i.e., norms and values) facilitate task performance? Does it hinder or help meet the demands of the task?

6) Organization/Informal Organization. Are the goals, rewards, and structures of the informal organization consistent with those of the formal organization?

Now looking at the model and understanding the six areas of fit presented, a comparison to defense acquisition programs can be made. Visualizing Project Management, (Forsberg, Mooz, and Cotterman, 2000)) states the following six reasons for program failure, or performing below customer expectations. Each of these six illustrates aspects of system incongruity or "misfit." The statement(s) in the following list are quoted from Visualizing Project Management.

1)   "Since projects and project teams are temporary, their performance may be incorrectly attributed to the luck of the draw." This is an imbalance between the program Task and Formal Organization arrangements or structure. There is an assumption in this quote, that the shortness of time a program team remains the same is so small, that luck rather than good

leadership, management, and performance by program members determine success. With this assumption being a prevailing reason Forsberg, Mooz, and Cotterman identify for program failure, there seems to be a belief between program members and possibly managers as well, that regardless of leadership or management, or their individual and collective performance, program success will be determined by mere luck. The relationship between the tasks involved in programs and the formal organization structure that results in temporary program participation creates the misfit. The misfit results in the luck perception, which can lead to possible deviation from deliberate, strategic and sound program management. When people begin to believe that luck and not effort determines their success, then effort will decline and a sense of gaming or gambling against undetermined odds will become the prevalent practice.

2) "Failure often results from fundamental confusion over precisely what is involved in managing a project successfully from inception through completion. Even experienced managers often disagree on important aspects." This is an imbalance between the Individual and the Tasks, as well as the Individual and the Organization. In this case of incongruence, the individual responsible for leading the program does not understand, or possibly cannot see, all of the needed tasks for program success. Therefore there is an imbalance between the program manager (individual) and the management decisions and tasks required. Additionally, the organization in this case, does not provide the individuals with enough tools or support structure to manage or identify those decisions and tasks required for program success, resulting in an imbalance between the program manager and what the formal organization expects of him or her.

3) "Many projects fail by repeating either the technical or business mistakes of others, which we refer to as Lessons Learned." This could be an imbalance between Task and Organization, Task and Informal Organization, or both. This reason for failure could also be a failure of feedback from outputs into necessary adjustments in transformation processes of the system. This

"misfit" occurs when organizations repeat the mistakes already experienced by programs or teams in the past. When there is no means to capture the experiences and results, new members may repeat them simply by performing their functions in the same manner and intention that resulted in the previous mistakes. Members of organizations have different experiences and if the members could share or pass on wisdom, the repeating of previous mistakes could be prevented. In this case, the organization should have a lessons learned repository of information or some method of knowledge management that allows managers and leaders to look at past successes or failures before performing a related task. Likewise, while knowledge management systems are a formal means to document past experiences and results, the informal organization can have a great deal to contribute to passing on lessons learned. The informal organization is the area where social groups develop, bond, and thereby pass on experiences simply through casual discussion after work or at lunch. Military Warrant Officers are an excellent example of a group of technical officers in various positions that come together to mentor the new officers and share information to promote the overall success of the Warrant Officer Corps. While they may not be on the same team, they informally work together as a professional group to promote the success of their profession as well as the formal organizations to which they are assigned. This type of sharing learned experiences pays off in shortening the length of time it takes to train managers and leaders, and decreases the probability of mistakes reoccurring by different members of the organization.

4) "Plans don't scale by demanding more and more from less and less." This is an imbalance of nearly all six fit categories. This failure refers to the situation defense and corporate managers have found themselves in for years due to downsizing and budget reductions; doing more with less. The authors of Visualizing Project Management acknowledge this point as a reason for failure simply because leaders intentions are rarely to do less, even though they may have less people and resources. The imbalance occurs when

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required tasks lack the needed personnel or resources, and when individuals are faced with the task, but insufficient support from the organization.

5) "Inadequate skills." This failure is seen when individuals are incapable, unqualified, or untrained to perform a required task.

6) "The trends toward specialists, each with their own language, coupled with the temporary aspects of projects, necessitate the definition of a common vocabulary for each project." Visualizing Project Management views project teams made up of individuals from different functional areas (e.g., engineering, computer software programming, finance, logistics). These functional differences can cause incongruity. Looking at Figure 5, the transformation process can breakdown between individuals, the informal organization, and the formal organization when trying to understand and perform tasks without a common vocabulary.

The authors of Visualizing Project Management, when presenting the six frequent reasons for project failure referred to the end state of the project performing below customer expectations. The customer expectations must be viewed as an outcome, and meeting the expectations should be a planned desired outcome. Nadler and Tushman argue that without fit and balance in the organization those six reasons for project failure, linked to the six imbalances in the congruency model, can be expected. Performing below customer expectations is exactly what the Supportability policy aims to improve. The customer expects the delivered system to perform when needed, as anticipated. Referring back to Aldridge's testimony, eliminating cost overruns in acquisition was part of his goals as Under Secretary of Defense, Acquisition, Technology, and Logistics. The Supportability policy is directed to lower Total Ownership Costs and deliver the customers (i.e., both the taxpayers financing national defense and the war fighters defining the need in acquisitions) a reliable product that does not exceed planned costs. Obtaining balance within our acquisition community and our acquisition programs, based off the findings in Visualizing Project Management, will be an essential step for success.

The presence of organizational imbalance can be found in a variety of ways. Nadler and Tushman above presented six. These areas of misfit can be found in DOD acquisition organizations as well. Imagine a program team that is overburdened with

Friday afternoon requests from higher headquarters to respond to a cut in their budget. They are expected to have the detailed response in by Monday morning start of business, and workers end up spending their weekends in the office to prepare the rebuttal report. Organizational imbalances as previously described can be identified quickly. The Friday afternoon mark inquiry arrives in the form of a negative incentive. The incentive to prepare the report is: do it, or lose the money in the budget. The individuals preparing the report, if successful might be praised afterward, but the negative effect on the individuals required abort their weekend plans may be unsalvageable. The individual(s) spending the weekend working on the report probably become rather dissatisfied with the organization and the tasks required of them. The informal organization could start to work against the formal organization, and the formal organization may react adversely to the task and the higher formal organization providing the adverse conditions. This is one example of how imbalances appear in an organization. The successful leader and manager will find ways to keep the organization in balance. Rewards and incentives can play a large role in balance. Technological support can help balance if it makes tasks simpler to perform. Maintaining the needed amount of people with the proper skills is another way to maintain balance. The organizational structure may need changing to obtain balance. Lastly, anything that can be done to manage or control the pressures placed on the organization by the external environment can significantly help in keeping balance.

Obtaining balance in projects and programs in these areas of identified imbalances does not require exceeding the limits of resource constraints. Obtaining balance will require using the steps presented by the model to understand where the imbalances lie, and then deciding how to communicate effectively and structure the organization to obtain balance and the desired outcomes and accomplishments that will make programs more successful, and also set each program up for success with respect to Supportability. Attaining congruency within the organization will minimize the six common reasons for program failure and simultaneously work in the compliance with the Supportability policy thereby facilitating implementation.

The imbalances that degrade congruency may vary from one organization to the next. However, any leader can use the congruency model to analyze their own

organization's levels of congruency. The following subchapters present areas that can influence effective policy implementation in their own right, but also can be seen as a part of the congruency model and assessed for balance in the six areas of fit.

B. REWARDS AND INCENTIVES FACING PROGRAM MANAGERS.

The typical reward or incentive for a Program Manager who does well (i.e. achieving cost, schedule, and performance) is a follow-on assignment as a Program Manager of a larger program or a similar elevation in career status to the public or commercial sector. While a Program Manager works for the government, there are no large bonuses or profit sharing financial rewards. The incentive provided by the organization is increased power or status by position within the organization.

If the government desires to minimize cost overruns experienced in systems' Total Ownership Costs, then there must be a reward mechanism change that rewards something other than delivery to the war fighter. Cost overrun avoidance is achieved by increased reliability, maintainability, and availability. (Blanchard, 1998) The Supportability policy says we desire Program Managers to value and respect Supportability and we must be cost conscious while serving the needs of the war fighters. Therefore the reward system needs to reward Supportability and reliability simultaneously and equally to technical performance or rapid delivery.

Causes for potential reward system ineffectiveness range from the following possibilities (Kerr, 1995):

1) Fascination with Objective Criteria
2) Overemphasis on Highly Visible Behaviors
3) Hypocrisy

Fascination with objective criteria occurs from management seeking to establish simple, quantifiable standards to base performance and rewards. The simple, obvious, and understandable goals can lead to undesirable performance or goal displacement in areas of the organization (Kerr, 1995). If the Program Manager's reward system revolves around delivery of the system, an overarching goal for everyone might be to support the Program Manager's decided delivery date. Schedule is simple and easy to measure but does not capture the full range of factors for which the Program Manager is responsible.

An over-emphasis on the objectivity of schedule measures could lead to short cuts in design, functional analysis, logistics supportability analysis, and logistics test and evaluation. An incentive system that rewards schedule over other factors (i.e. cost, performance, reliability) can make the timeline more important than those other factors because that is where the reward and focus is. Once a delivery date is planned and set, subordinate activities can plan their work and synchronize their schedules. This schedule orientation, created by such a reward system, can lead to a rigid program schedule that makes changes difficult. Any unplanned delays, problems or identified shortcomings, may be left unreported or unresolved so as to not delay delivery.

An overemphasis on highly visible behaviors is Kerr's (1995) second potential for reward system failure. This occurs when the rewarded activities are the obvious actions, while other contributing activities are difficult to observe or go unseen altogether. This reward breakdown is also demonstrated when recognition and reward is given to a few individuals when an entire team truly is responsible for the rewarded performance. Kerr refers to examples in sports where individual statistics become individual's reward mechanism rather than the team's win-loss record. Starting quarterbacks on professional football teams receive the largest dollar contracts even though they could do nothing without their offensive linemen. This is because the touchdown passes they throw are much more visible than the blocking and pass protection the linemen provide.

In DOD this can occur from an overemphasis on current technical performance. Such a focus may presume an expectation of inherent long-term reliability, which is, by nature, difficult to observe. In general, Supportability factors are much more uncertain and hard to measure. The actual reliability of a component, ability for an assigned unit mechanic to repair, or the availability of repair parts throughout the life of a weapon system may remain unknown until long after the rewards and evaluations are due. Supportability is much more difficult to measure in the early years of a program, while more visible factors of cost, schedule, and performance become easy targets for building a reward structure around. The easy targets are likely to become the criteria for basing rewards and incentives; however, ease of measurement is one of the reward system pitfalls Kerr argues to avoid. (Kerr, 1995) A second reason for an over-emphasis on the highly visible factors is the emphasis on technical performance given by Acquisition

Reform. "The mantra for project management 2000 has become 'better, faster, cheaper.'" (Forsberg, Mooz, Cotterman, 2000) The 2001 Defense Quadrennial Review states, "The [Defense] Department will vigorously pursue the development and exploitation of technologies." Vice President Gore's National Performance Review of 1993 stated,

> Acquisition reform shares a common border with many of our most important goals: saving the taxpayer money; reinventing Government; strengthening our military; and improving our economy. To meet these goals in today's environment DOD must be able to rapidly acquire commercial and other state-of-the-art products and technology, from reliable suppliers who utilize the latest manufacturing and management techniques.

Defense Secretary Perry's Acquisition Reform mandate for change stated, "Rapidly acquire commercial products and technology from suppliers that utilize 'cutting edge' manufacturing techniques and 'best practices' in management." (Perry, 1994) The previous quotes created an appetite for new technology. The desire for rapid acquisition of the newest technologies can lead to a reward system that overlooks the Supportability issues behind the new technologies.

Hypocrisy is the third potential source of failure cited by Kerr (1995). Hypocrisy is evident when we state what we want, but then reward different behavior. Hypothetically, suppose that the Army is critically short Captains and wants to retain Captains. And suppose the Army is aware that financial compensation is an issue in Captain retention due to job opportunities presented in a strong national economy. If the Army decides mid-year pay raises are in order to retain officers, and then sends the majority of the pay raises to Lieutenant Colonels with an average of 17.5 years of service (20 years needed to retirement), then the reward system is rewarding the Lieutenant Colonels who are already inclined to remain in the service to reach their 20 year retirement option, and not the Captains who are leaving in droves. This would be an example of hypocrisy in the reward system.

A similar analogy can be made to DOD acquisition community. If the DOD wants to avoid cost overruns, it should not be as concerned with pushing the present boundaries of technology in pursuit of newer capabilities at the expense of logistics support. If the services want to avoid cost overruns as stated by Mr. Aldridge, Under

Secretary of Defense Acquisition, Technology, and Logistics, then programs are going to have to weigh the benefit of newer unproven technological advancements against proven and reliable older technologies. Balance is needed between mission needs, technical performance, inherent reliability and supportability costs; and the acquisition community reward system should reflect that desire for balance.

The program manager is going to reward subordinate performance that contributes to the program manager's definition of success, which in turn is defined by the perception of what he/she will be rewarded for. The temptation to become fascinated with easy to see and understand criteria such as cost at delivery, delivery date, or performance indicators such as speed, can cause members to perform in ways that will be narrowly focus on those goals or measures, at the detriment in the long run to overall effects. Overemphasis on highly visible behaviors discourages members with indirect supporting activities to strive to do their best. Hypocrisy will further discourage behavior and undermine confidence in the entire organization. The Supportability policy is likely to be unsuccessful if the rewards and incentives for programs and program managers are not changed to support the policy.

C. ORGANIZATIONAL STRUCTURE OF SYSTEMS COMMANDS.

Organization structure is a large factor contributing to the culture and congruency of organizations. "An organization's structure is a relatively stable network of interdependencies among the people and tasks that make up the organization." (Wagner and Hollenbeck, 1998) An organization will succeed operating in a particular structure to the extent structure fits with other factors contributing to organizational congruence. In addressing implementation of the Supportability policy, organizational structure needs assessment for proper processes that make the structure work successfully with the rest of the organizational factors (i.e., technology, people, tasks, reward structure). The structure of an organization determines how work will be handled and what processes are required for success. Three organizational structures that relate to the services' material and systems commands are functional, work flow group, and matrix. Three processes imperative to the success of each structure are coordination processes, integration processes, and political processes.

In looking generically at the organizational structure of our services' materiel and systems commands, we typically find functional organizational designs. Functional organizations are those that are grouped based on similarity of tasks, responsibilities, or functions. Functional work groups help integrate and coordinate employees who perform similar tasks. This sort of cooperation can greatly enhance productivity and allow the organization to take advantage of other cost savings. (Wagner and Hollenbeck, 1998) The negative side of functional organizations is that functional grouping separates people who are performing different tasks along the same flow of work. (Wagner and Hollenbeck, 1998)

"Many organizations are functional and hierarchical; they suffer from isolated departments, poor coordination, and limited lateral communication. All too often, work is fragmented and compartmentalized, and managers find it difficult to get things done." (Garvin, 1998) Functional organizations rely on coordination processes due to the separate and alignment of workers along tasks. The separation of functions creates a natural disconnect between unrelated tasks, that ultimately need to come together on the end product.

Coordination processes integrate disorderly actions to produce a desired result. Typically large organizations accomplish coordination efforts by mutual adjustment, direct supervision, and standardization in the workforce. (Wagner and Hollenbeck, 1998) Mutual adjustment occurs when members of the organization occupy similar levels of responsibility and they share information through professional discussions [interpersonal relations]. Direct supervision requires a responsible individual to determine what needs to be coordinated with other functions. This is applicable in the example of a project coordinator who is chartered as a representative of the project manager, and proactively ensures future events will occur as planned. Standardization provides workers stable conditions and procedures to follow in performing their tasks. Standard operating procedures prevalent in military organizations are an example of standardization coordination efforts.

As commands follow functional structural lines, the implementation of the Supportability policy requires the presence of a Supportability functional department and coordination processes that will keep Supportability factors aligned with other functional

tasks performed on a project or product. If the services' material and systems commands are structured functionally, then there should be a functional team responsible for Supportability. As well, if the specific acquisition programs have functional teams, then there should be a team dedicated to the sole function of Supportability. Where functional structure exists, coordination processes must be prevalent for organizational effectiveness and congruence. (Wagner and Hollenbeck, 1998)

Work flow grouping is an alternative to a functional organization structure. A work flow grouping organizes members representing different functional areas to collectively perform the work from initiation to completion. (Wagner and Hollenbeck, 1998) The primary strengths of work flow grouping grow out of the fact that it integrates all the activities required to manufacture a product or provide a service. Work flow grouping does not permit the economies of scale of functional grouping. With work flow-grouping there may not be sufficient redundancy among people who perform the same function to help or substitute for one another. (Wagner and Hollenbeck, 1998) If material and systems commands follow a work flow organization structure then Supportability representatives must be present on all work flow groups in order to keep Supportability co-equal to Cost, Schedule, and Performance.

Integration processes are critical to the success of work flow groups and Integrated Product Teams. Integration processes involve combining entities to obtain performance and compatibility of represented specialties present in the work flow group. Integration processes also involve combining organizational control systems, information systems, training programs, culture, and other processes such as rewards. (Hocevar and Owens, 1998) Leadership must carefully plan integration processes in order to maintain congruence due to the fact integration combines and involves so many organizational factors. Critical to team effectiveness is common goal's mutual accountability, and appreciation for the contributions of different functional representatives to the team goal.

Integrated Product Teams commonly found in DOD acquisition programs and systems commands are an example of work flow groups and an ongoing integration process. The assigning of members from different functional groups to a team is an integration process. The functional work capabilities represented on one team provides the desired integration of a work flow group. If the services are going to use work flow

structure then a Supportablity representative, with an equal voice to other functional specialties on the team, needs to be assigned to each work flow group or team in order to make Supportability implementation effective. Understanding and carefully identifying the contextual issues [culture, support systems, interpersonal processes] will enable leaders to maintain organizational congruence while implementing the Supportability policy. Implementations into the teams will gradually change the work flow group in a way that hopefully delivers the desired results, and positively impacts on the rest of the organization culture and contextual factors.

A third organization structure exists which blends both the functional and workflow groups into a matrix organization. In the matrix organization all members are assigned to functional groups. Meanwhile, as projects or programs come along, members from each function are teamed together into a work flow team. The matrix has competing interests between the heads of functional departments, and the program managers responsible for leading work flow groups made up of members from each functional department. The competing interests in matrix organizations create conflict designed to provide a natural system of cost-benefit analysis behind actions and decisions. "Matrix structures provide a continuing source of lateral linkage and integration, but are notorious for creating conflict and confusion." (Bolman and Deal, 1997) The members of the program teams can be caught in the middle of these conflicts due to their responsibilities to the success of the team and to their functional department.

The matrix organization requires coordination and integration processes. Political processes also become imperative to survive the conflict created which is a result of competition for limited resources. Finally, control processes and performance management processes assist the organization by clarifying the confusion the matrix organization creates. The competing interests and natural conflict make congruence as important an idea as in the previous organization structures presented. The presence of common overarching goals and mutual adjustment among competing leaders to reach consensuses can keep the conflict manageable and produce the calculated results expected from the matrix organization design. Additionally, control processes and carefully developed performance management processes can improve organizational effectiveness. (Hocevar and Owens, 1998)

The implementation of the Supportability policy requires understanding the policy position among organization members [stakeholders] in the matrix organization [political environment]. A deliberate implementation plan should involve understanding the cultural, using the appropriate processes to leverage Supportability against other impeding factors, and developing consensus and coalitions in political processes.

Acknowledging that functional, work flow, and matrix organizations exist throughout DOD organizations, an understanding of all three structures and related processes are required to implement change within the organization. Leaders desiring change may wish to change a desired outcome of the organization without changing the organization structure through process change or improvements. Complete organizational structure may need to be changed. Keeping in mind organizational congruence, the desired outcomes from implementing the Supportability policy, and the differences between functional, work flow, and matrix organizations and related processes will increase the chances of successful implementation.

D. POWER BASES WITHIN THE SYSTEM.

Power bases exist in every organization. They can be a proponent or opponent to desired changes. A power base problem within systems and materiel commands could be an obstacle to implementation of the Supportability policy. The strength of members from some departments or competencies results in a distribution of power that may not provide Supportability with enough voice. These organizations rely substantially on civilian labor that derives their power from expertise achieved through years of experience at their job, and referent power which is obtained through others' desire to attain the level of expertise and expert power of the power holder (Wagner and Hollenbeck, 1998). Their expert power is certified by the Defense Acquisition Workforce Improvement Act, which delineated requirements and established professional and administrative codes. In the Defense Acquisition Workforce the engineers are coded as professionals while the logisticians are coded as administrative. In order to balance out the power distribution between engineers and logisticians, the Defense Acquisition Workforce Improvement Act should be revised to create professional standards and certification requirements for logisticians, thereby elevating their status to professionals.

Power is defined as the ability to influence the conduct of others and resist unwanted influence in return. Expert power is based on the possession of expertise, knowledge, and talent. Legitimate power is based on norms, values, and beliefs that particular individuals have the legitimate right to influence others. Referent power is derived from personality, values, and goals, interacting with others with charisma that others find desirable. (Wagner & Hollenbeck, 1998)

Aldridge stated in his testimony to Congress that we needed to continue to train our acquisition work force. This has to happen for logisticians as a community. This training increases knowledge and should increase expert power and legitimate power. Similarly, logisticians must continue their training and experience, and work to be accepted as a professional equal in power and ability to other professions.

> It is one thing to understand power--how to diagnose it, what are its sources, what are the strategies and tactics for its use, how it is lost. It is quite another thing to use that knowledge in the world at large. In putting the knowledge of power and influence into action-- managing with power-- is essential for those who seek to get things accomplished… Computers don't get built, cities don't get rebuilt, and diseases don't get fought unless advocates for change learn how to develop and use power effectively…Developing and exercising power requires having both will and skill. It is the will that often seems to be missing. (Pfeffer, 1992)

If this is the case with logisticians in our acquisition commands, then the logisticians as a profession are going to have to exert themselves more forcefully, and enhance their persuasion and negotiating efforts. Acknowledging that logisticians deal greatly with the Supportability factors, they are most likely to be the proponents of the Supportability policy and Supportability implementation. The existence of power bases adds to organizational culture and context and must maintain organizational congruence, just as all other areas require. The ability of logisticians to exist as a profession and maintain power bases equal in strength to other power bases in existence within DOD organizations may be critical to Supportability implementation. DOD's successful transformation to an organization that effectively implements Supportability factors into acquisition designs may require change to existing power bases.

E. A NEED FOR EFFECTIVE COMMUNICATION IN CHANGE MANAGEMENT.

Communication is key in managing change. In 1997, the Office of the Assistant Secretary of Defense (Force Management Policy) published the 8ᵗʰ Quadrennial Review of Military Compensation. This report recommended fundamental changes to the way the armed services managed their resources. The process emphasized a need for adopting and communicating a shared vision, and for developing a strategy for moving toward the desired end state. The report emphasized developing a plan for communication for effective change: "For any substantial progress to be made, communication must take place at all levels of the organization."   The communication plan must contain the message and the medium for widespread dissemination and comprehension. The need for effective communication is imperative for the success of any policy changes.

For the Supportability policy to be implemented throughout the services, there must be a common vocabulary that communicates the need for the policy. At the present, the Army is the only service to adopt the Supportability policy. In brief discussion with the Army Deputy Chief of Staff for Logistics, Mr. Larry Hill, he identified one reason that Supportability has not been made co-equal to Cost, Schedule, and Performance by the other services, is because they are handling Supportability as a subset of Performance. There is a fundamental difference in the way Supportability issues are being communicated, received, and thereby handled by the services.

Implementing change such as the Supportability policy in organizations requires communication to take place throughout the organization with clear meaning and intent, leading to a shared understanding by the members of the organization.

> "Nothing will derail effective transition faster than ineffective communication. It is essential to seek, and often influence opinions of management, peers, employees, and customers about [the] transition effort…Communication is so vital to the ultimate success of your transition plan that a mediocre transition plan communicated well will probably help contribute to smooth organizational change; a brilliant transition plan poorly communicated will undoubtedly fail." (McCarthy, 1995)

Problems in communication can become a major obstacle to transition efforts. Change can cause anxiety or confusion in organization members. Rumors can fill a lack

of communication and factual information in the presence of confusion. Eventually, if enough rumors and speculation are communicated, members may not know what to believe, management communicating transition plans, or deviations from the truth circulating through the work place. McCarthy recommends a deliberate communication plan to assist transition plan implementation. One challenge to think through in developing the communication plan is structuring messages to communicate what is desired. (McCarthy, 1995) Messages sent are not always messages received; so it is also necessary to solicit feedback or have dialogue with critical audiences to evaluate communication effectiveness.

Structuring messages to communicate what is desired requires understanding the audience(s) that will receive the communication. Different audiences may require different communication techniques, media, and language. The communication plan, at a minimum, should ensure chosen language and vocabulary is understood by all members. Repetition, message consistency, and multiple media will also increase the probability intended communications will be received and understood. Repetition will increase the chances the desired communication is heard; heard frequently enough, members will even remember key phrases exactly as they were stated. Consistency of messages should increase understanding and members' confidence in the validity of messages communicating the transition plan. Multiple media will increase the chances of communicating to people with varying receiving (i.e., audio, written, video) and learning styles (i.e. learning through visual or experiences, written information, or through conceptual understanding). (McCarthy, 1995)

If the communication plan aligns with transition plan efforts and milestones for change implementation then organization commitments and transition milestones will match messages. This increases understanding and the effectiveness of both the communication plan and the transition effort. The members of the organization can then see actions taking place that coincide with what they have heard or read in recent or past messages. The alignment of the communication plan with the transition plan also allows for a formal frequency of communication that can become predictable to organization members. Like knowing when to hear the evening news on the television or radio,

organization members will know when to expect to hear new information and where to find the information.

Feedback is required to ensure recipients understood messages communicated. Mechanisms to test understanding (i.e., informal interviews, debriefings, surveys) can assist leaders and managers in ensuring the communication plan is effective and messages sent communicate what is desired.

Understanding the pitfalls of communication in organizations is essential in developing an effective communication plan. Constructing a deliberate communication plan that supports and aligns with activities in the change implementation plan and maintains congruence with organization culture, personnel, processes, and other contexts within the organization can significantly improve the organization's chances of successful change. While the Beckhard and Harris model require leaders to identify how the organization will transform, the communication plan will tell the organization how the transformation will take place.

F. HOW TO MEASURE SUPPORTABILITY POLICY IMPLEMENTATION PLAN FOR EFFECTIVENESS.

The last block on the Beckhard and Harris map of change management is managing the transition stage. Once the Supportability policy is adopted in DOD, it is necessary to devise a method to assess the success of the changes made to implement the policy. As the O-6 from the Systems Command discussed, there are problems with cost overruns found during the required OSD acquisition audits. He mentioned that audits conducted by the Office of the Secretary of Defense (OSD) have reported gross cost increases in excess of the system-programmed costs six years after award. If this is true, then DOD acceptance of the Supportability policy would be a reasonable policy attempt towards eliminating cost overruns and managing total ownership costs. The OSD audits mentioned, present a measure for defense acquisition programs that could be an evaluator of the success of the Supportability policy.

A simple rule of thumb for measurement of policy success would be to record the award cost amount of the project at inception and compare that figure to the dollar amount spent just six years later. The first six years of the program will be an indicator

of properly incorporated Supportability factors into a new acquisition program. New equipment usually has a "break-in" period where failures are experienced in the infancy stage. (Blanchard, 1995) Infant failures can be experienced as early as initial fielding of a new system. If the latter (program six year cost) figure is the same (or close to) the previously stated award (planned, predicted, and budgeted cost) amount, then that would offer measured evidence of the successful implementation of the Supportability policy. Success here would be defined by showing that supportability factors were effectively incorporated in the design and development phase and resulted in minimizing cost overruns, at least within the six-year window of post award.

Additional program audits should be conducted in four to five year increments throughout the lifecycle of a program, to assess the effectiveness of Supportability, achievement of maximized inherent reliability, and availability of maintenance repair parts and technical support. These are the years that become more costly to DOD and the services. The effect of well-planned Supportability is similar to a car owner's experience. If a car owner purchases a reliable automobile, completes payoff requirements, and then has no mechanical failures with the car for ten years, they are pleased with their investment. The car proves to be reliable and a good investment for the owner. If the car is paid off, and then proceeds to have transmission problems, engine troubles, and other problems that require expensive repairs, then the owner will most likely be displeased with his or her purchase. The owner put money into an unreliable car, and continues to put additional money into maintaining the car in order to operate it daily. The same type of cost problems can be seen in defense acquisition programs on a much larger scale. If we continue to audit and document program costs throughout the program lifecycle (in four-year increments), the audits can be scheduled so that results can be incorporated into Quadrennial Defense Reviews that are a part of the Government Performance Reporting Act and service Program Objective Memorandums that are a part of each services formal budget appropriation process.

In addition to periodic audits, defense managers need to identify a common standard for Supportability. The common standard will add meaning to the results found in audits. There are many ways to measure. Operational readiness rates reflect availability of the system. Mean time between failures reflects reliability. A_I is a

technical term that measures operational availability with respect to inventory levels or costs. There are several measures in existence. The important idea is that the services reach consensus on exactly what to measure, and how to measure so that all the results are in useful meaningful terms.

G. A SUPPORTABILITY CHAMPION.

Leaders must be dedicated to participate actively in the change themselves. For leaders, change means being willing to submit to the scrutiny of the entire organization and personally lead the change effort. The signals leaders send through the rest of the organization are critical to change and their actions communicate a message to the rest of the organization about their commitment to strategic change. The leader's participation in implementing the policy reflects commitment and sends the message that the change is for real or important. (Mintzberg, 1994) The Supportability champion needs to remain in position long enough to see the change through to completion; to see the organization through transformation. The Supportability champion within DOD needs to be from the top of the organization. Simply appointing the senior logistician within the services will probably prove insufficient to drive the needed changes and commitment from all parts of the organization. The logisticians listening to the senior logistician talk about Supportability will be like a minister preaching to a choir. It is the organization congregation that needs to be convinced—those outside the logistics branches; and they will more likely be convinced by a leader they feel responsible to. The change champion must be able to influence all the services' acquisition activities and provide a vision that creates a shared understanding and the resources required to change the organization and execute the transformation. Currently the Supportability policy is in effect only in the U.S. Army. In this instance, a champion from within the Secretary of the Army or Army Chief of Staff's office is sufficient to increase focus on Supportability. However, if the Supportability policy is to be implemented DOD-wide then consistency across services introduces the need for one policy for all services and a champion from the office of the Secretary of Defense. Similar to the need for consensus on one measurement, there needs to be consensus on what the intended change is, and how it effects each service. One champion would keep all services under the same policy.

The Clinton Administration required the DOD to reengineer and reinvent itself by the 1993 National Performance Review (NPR). Reengineering changes work processes, and reinvention changes entire organizations. The implementation of the Policy of Supportability as a co-equal factor to cost, schedule, and performance is very similar to the NPR. Like the Supportability policy, the NPR asserts a reinvention of acquisition: to manage resources, cut red tape, and use common sense. The NPR policy had a champion. The Champion was Vice President Al Gore with the support of the President. The Army's Supportability Policy Champion lacks the top down enforcement for DOD-wide enforcement. The Supportability policy would benefit from a champion that stretches across DOD, Congressional, Chairman of the Joint Staff, and Service lines to provide the necessary momentum for success.

The reinvention labs created by the NPR experimented in practices, processes, and procedures. Forty percent of the 120 DOD wide labs reported significant levels of innovation. Out of eight factors, the number one success factor noted was "Commitment to reform at the top of the organization" (Jones, 1999). If the Supportability policy is to be successful throughout DOD acquisition, it will need a champion.

H. MOTIVATION AND MORALE ISSUES.

In Chapter I, Aldridge mentioned the need to revitalize the acquisition workforce. From the imbalances commonly found in organizations outlined by Forsberg, et al, and Nadler and Tushman discussed in section B above, we assume the need for revitalizing is due to two things. The first need for revitalization is possibly due to low morale and motivation of the workforce. The second need for revitalization is a result of the low morale combined with the rewards and incentive structure for members of the defense acquisition organizations, which discourages new labor to accept Government Service positions. This results in a Government Service civilian workforce that, as a population gets older over time, and has more workers with retirement interests rather than career or professional advancement interests.

Motivation is the factor(s) that initiate, direct, and sustain human behavior over time. Motivator factors according to Frederick Hertzberg, are characteristics of the job that influence the amount of satisfaction experienced at work. (Wagner and Hollenbeck,

1998) It is important to understand motivation theory to see how motivation factors relate to the individual and the organization rewards system designed to promote organization successes.

Vroom's Expectancy theory and a correlating motivation model allows us to analyze and understand motivational and morale factors of the acquisition work force from the worker's perspective. Expectancy theory is a broad theory of motivation that attempts to explain the determinants of workplace attitudes and behaviors through concepts of valence, instrumentality, and expectancy. (Wagner and Hollenbeck, 1998) Valence is a measure of the attraction a given outcome holds for an individual, or the anticipated satisfaction the person receives from a particular outcome. Instrumentality is a person's belief about the relationship between performing an action and experiencing an outcome. Determining people's instrumentalities is important because their desire to perform a particular action is likely to be strong only when both valence and instrumentality are perceived as being acceptably high. Expectancy, as a component of the model, is the belief of a link between an effort and associated success for the effort put into an action.

The model focuses on three particular outcomes that leaders and managers should understand in when assessing the morale and motivation of the workforce; desire to perform, the effort put towards a task, and the level of performance. The desire to perform is a result of the influence of valence and instrumentality. The effort put forward is a function of the desire to perform and the expectancy (belief or expectation of success). The last outcome, performance, is a product of the effort put forward, the ability of the individual, and the accuracy of role perception. Steps 1 through 4 on the top of the model break the model into pieces to show where components combine to influence outcomes. Feedback arrows stem from performance to depict the outcomes effect on the inputs. These feedback arrows are important to acknowledge because they help depict how outcomes received for performing at some level at one time will affect the persons perceived instrumentalities at later times. (Wagner and Hollenbeck, 1998)
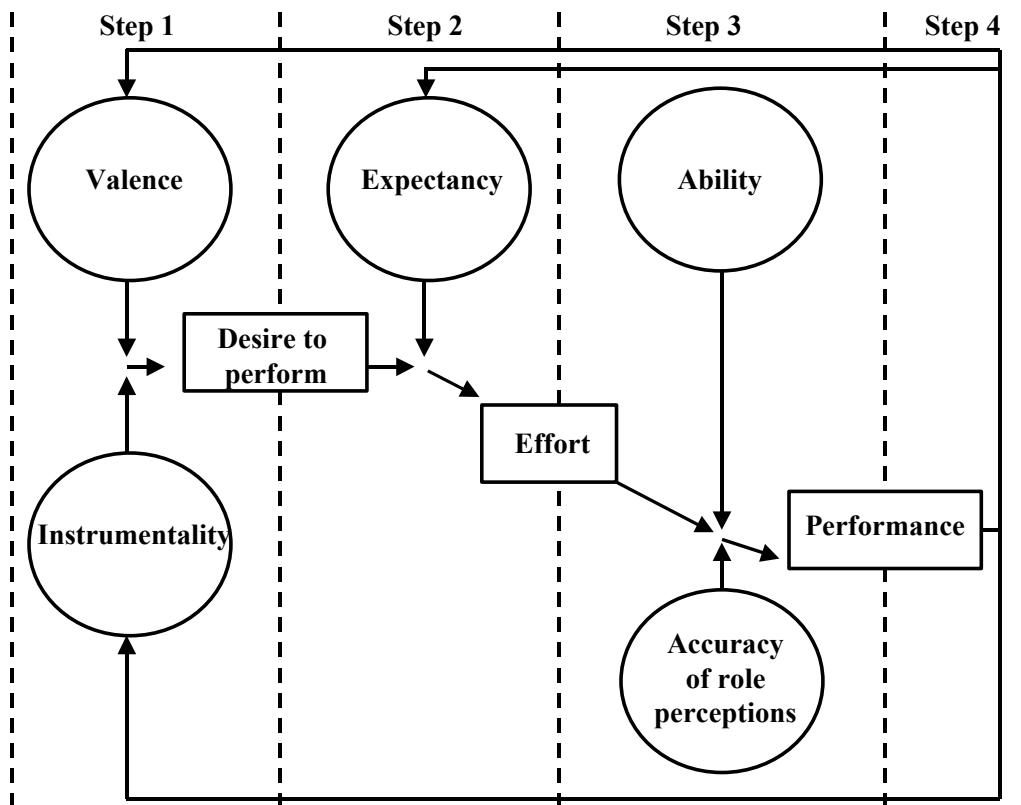
Figure 5. A Diagnostic Model of Motivation and Performance (after Wagner and Hollenbeck, 1998)

By using expectancy theory and the expectancy model presented, organizational leadership can begin to assess motivation and motivator factors within the organization in the context presented by the theory. Understanding individual needs and motivator factors can then be combined into the aggregation of organizational motivator factors. These must remain in balance with other organizational factors to maintain congruence discussed in section A.

The following quote discusses where the individual needs and motivation enter into the organization, assessed by further motivation theory.

> Much of traditional motivation theory is based on Abraham
> Maslow's five hierarchical levels (physical, security, social, status,
> psychic), each level becoming an intrinsic motivator after the lower-level
> need has been met. It has been our observation that any one of the levels
> maybe dominant in the particular person [based on the level in the

hierarchy that the individual is needing at a given time]. Some people are more responsive to psychic than to social incentives, regardless of how well their social needs have been met. Needs can regress as the environment changes. (Forsberg, Mooz, Cotterman, 2000)

In the previous quote, Forsberg, Mooz and Cotterman add to Maslow's hierarchical theory by pointing out individuals' needs vary at any given time, and from one person to the next, as comfort levels increase or decrease at each level of the hierarchy. Steven Covey further elaborates this point by stating "satisfied needs do not motivate. It's only the unsatisfied need that motivates." (Covey, 1989) The fact that motivation is individualistic in nature, according to the motivation theory introduced by Maslow and others, the idea of understanding the motivational factors within the organization may be extremely complex. The factors may be changing from one person to the next, or from one crisis moment to the next. This increases the degree of difficulty organization leaders have when trying to determine what motivation factors are most prevalent to the organization as a whole.

The studies of industrial psychologist Fredrick Herzberg examine specific factors that motivate people in their work environment and those that do not. Herzberg breaks down motivational factors into two categories. The first category, termed Motivational factors (Achievement, Recognition, Work itself, Responsibility, Advancement) is positive in nature. These factors are those that can lead to increased motivation and morale. The second category, termed Maintenance factors, (**Policy and Procedure** [emphasis added], Supervision, Salary, Interpersonal Relationships, and Working Conditions) involves negative motivational factors. In other words, they were found to lead to discontent only when missing or perceived as deficient. (Herzberg, 1959) For example, pay and satisfactory working conditions reduce motivation when absent. "Company-wide employee relations campaigns involve maintenance factors, whereas motivational factors are generally in the domain of the project manager and others in a direct leadership role." (Forsberg, Mooz, Cotterman, 2000) These motivation and maintenance factors can be incorporated into the expectancy model and tailored to increase Supportability in program management. The organization's reward and incentive structure discussed in the previous section, aligned with policy goals will result

in motivational factors that create congruency between the individuals, who are expected to produce desired Supportability results, and the organization desiring increased Supportability within its acquisition programs.

The Supportability policy can be analyzed using this expectancy model. With a new goal, there are new performance expectations. The goal and the expectations must be clearly communicated. The goal and expectations must be reinforced by rewards that are valued [valence] and linked directly to accomplishing new Supportability goals [instrumentality]. Logisticians need to feel their capabilities and efforts will have an impact [expectancy]. Thus increased motivation and morale is linked to clear communication of new goals, establishing performance contingent rewards and accountability systems; and empowering and training logisticians to be effective participants in accomplishing goals of supportability.

In addressing revitalization, and focusing on motivation and morale issues, defense acquisition leaders and program managers can evaluate the work required of their workforce, the workforce's desire to perform, effort provided, and performance level in terms of motivating factors and by using the presented model to predict results and outcomes. These expected results and outcomes from the motivating factors and the expectancy theory can be looked at in terms of Nadler and Tushman's congruency model for effect on the organization as a system. The leadership can use the Beckhard and Harris model to identify the effects of the motivation changes on the organization, to see if they are aligned with the direction the organization is trying change and transform towards. Ensuring the right motivational factors are present should increase performance and success rates within our programs and acquisition commands. Improving the qualities of valence, instrumentality, and expectancy between the workforce and the organization should increase morale and motivation over time. Increases in motivation and morale should increase the performance of our workforce, the success of our programs, and positively influence potential new hires considering government employment to augment or replace the aging and retiring members of the organization.

I. CREDIBILITY WITHIN THE ACQUISITION COMMUNITY AND ITS STAKEHOLDERS, AND WITHIN ACQUISITION PROGRAMS.

In Chapter III, Aldridge was quoted identifying a need "to achieve credibility" within the acquisition and logistics support process. Later in the same chapter one of the interviewed officers referred to logisticians not having a voice in programs. This points to a need for increased credibility of logisticians in the programs, and an increase in the credibility of the acquisition community with its stakeholders-- the American public represented by its elected officials.

> Credibility refers to the degree to which the information provided by the source is believable, and it is a function of three factors. The first is expertise, or the source's knowledge of the topic at hand. The second is trustworthiness, or the degree to which the recipient believes the communicator has no hidden motives. The third is consistency between words and actions. Credibility is low whenever the source of the communication is either unknowledgeable, untrustworthy, or acting in a way that contradicts the spoken message. (Wagner and Hollenbeck, 1998)

The previous excerpt gives three areas to analyze to obtain an understanding of why the acquisition community and its members may lack credibility, and possible means to "achieve credibility." The three areas for analysis are expertise, trustworthiness, and consistency between words and actions.

Expertise within the acquisition community may be a source for declined credibility for two reasons. First, Aldridge identified a need to continue to educate and train the acquisition workforce. The need for additional education and training is an identified issue from senior leaders in the government and acquisition community, that the desired level of expertise may not be present.

The second reason expertise may be contributing to low credibility is the labor coding of logisticians. Logisticians within the government civilian workforce fall under the labor code classification of 34G's, which is an administrative class in contrast to professional categories containing engineers and others. This labeling allows any administrative class government civilian to become a logistician without formal professional prerequisite training. While the professional categories require educational degrees and degrees of experience, the administrative employees seeking to become

logisticians need only time in the government service to work their way into logistics positions. Therefore there is a lack of standards of expertise within the logistics and acquisition community that may contribute to the lost or declined credibility acknowledged by Aldridge.

Trustworthiness is the second component of credibility, and it too can be seen as a possible source within the acquisition community for low credibility. Wagner and Hollenbeck mention hidden agendas with trustworthiness in the above quote. The DOD acquisition community receives its funding and approvals from the largest political organization in the nation, Congress. This leaves political and hidden agendas to be a part of both the acquisition community and the congressional stakeholders way of doing business. (Wilson, 1989)

Senior Executive Service officials are politically appointed. The constituents across the nation elect congressmen and women to represent their individual and collective interests on the floors of our legislative and executive branches of government. While all of the politically appointed officials and the publicly elected officials may hold the nation's best interest as their professional responsibility, they all have individual interest in supporting their constituency's public and commercial interests. Elected officials get re-elected by looking out for their constituents and bringing federal monies back to their state or territory. The acquisition community has to take into consideration the motives and agendas of congressional committees when preparing proposals for new acquisition programs or post production support initiatives. While trying to understand the congressional stakeholders that may be most influential to their proposal acquisition community representatives may dilute the acceptability or trustworthiness of their own credibility.

Congress is the financial controlling agent of DOD funding, and to receive approval for funding from Congress, DOD officials must gain consensus. Gaining consensus is required to get votes passed that will authorize budgets. Without going into great detail about interest groups and political party lines, it should be understandable how hidden agendas are expected to be prevalent on both sides of discussion, those sides being represented by the acquisition community and Congress (which has varying sides in itself).

Within the acquisition community, hidden agendas can be expected as well. In most cases, a manager learns that getting ahead can come from doing what is politically and socially correct. This becomes a matter of personal credibility. (Bolman &Deal) This can be true of our own acquisition community and the program manager's career interests. "Because getting ahead and making it to the top dominate the attention of many managers, both organizations and individuals need to develop constructive and positive ways to master the political game." (B&D) Part of mastering the political game within the acquisition community is understanding how to compete, measure, and report success. Without ensuring a consistent means of measuring success criteria, the validity of reported data can be questioned and the career incentives and motivations may be temptation enough for false documentation. The ability to manipulate statistics and figures can create a trustworthiness liability within the acquisition community. The use of measures based on agreed-upon standards that represent the interests of multiple "customers" would be a good technique to reduce the likelihood of people operating on hidden agendas.

The third area to analyze is consistency between words and actions. Congress can look at the rate DOD acquisition managers deliver what they said they would when funding was approved. The use of past performance data may be used to assist congressional officials further in accomplishing previous mentioned hidden agendas, or it may actually be to ensure proper stewardship of taxpayers' dollars. Past performance data is usually collected by Government Accounting Office audits. When the military and DOD are under the scrutiny of GAO audit, the DOD community's credibility is at stake. The loss of credibility in the eyes of our stakeholders typically results from over-expenditure or the loss of accountability in our acquisition programs.

The over-expenditure or loss of accountability in acquisition programs leads to looking again at the consistency of words and actions within the acquisition community and acquisition programs. Consistency between action and words within acquisition programs should be a matter of control mechanisms, and individual and collective responsibilities to not let preventable inconsistencies arise.

Specific mechanisms for sharing power, responsibility, and accountability can be established, and in doing so should prevent inconsistency in words and actions, which is

determined to undermine credibility. Collective accountability may be the key to loosening the burden of sole responsibility off the shoulders of the program manager.

> "Members of high-performing teams hold themselves collectively accountable. Pinpointing individual responsibility is crucial to a well coordinated effort, but effective teams find ways to hold the collective accountable. Teams enjoying a common purpose and approach inevitably hold themselves responsible, both as individuals and as a team, for the teams performance." (Bolman and Deal 1997).

Visualizing Project Management advocates the use of documentation or a memorandum of charter for each project. This charter "sets the tone for teamwork by accepting personal accountability for the proposal made by the team." (Mooz, et al, 2000). The collective accountability seems more likely to establish an effective policy of supportability and with proper management, better control of credibility, responsibility, accountability, and equity for all team members. Collective accountability within programs would increase reliance on logistics expertise and thereby raise credibility of logisticians on program teams. Logisticians would need to back up their roles and responsibilities with professional credentials that warrant the title of experts. Lastly, to increase chances of program success, hidden agendas must be prevented from arising and changing the direction of a program.

J. CULTURE OUTSIDE AND INSIDE THE ACQUISITION COMMUNITY.

There are many terms and definitions for the word culture. Wagner and Hollenbeck (1998) define culture as "the shared attitudes and perceptions in an organization that are based on a set of fundamental norms and values that help members understand the organization."

> [C]ulture [is] a pattern of beliefs and expectations shared by the organization's members. These beliefs and expectations produce norms that powerfully shape the behavior of individuals and groups…Norms are expectations about what constitute appropriate or inappropriate attitudes and behaviors, socially created standards that help us interpret and evaluate events. Although their [norms] content may vary, norms exist in all societies and, while often unnoticed, are pervasive.
> [T]wo distinctions need to be kept in mind. First…there is an important difference between the guiding beliefs or vision of top management and the daily beliefs or norms held by those at lower levels in

a unit or organization. The former reflect top managements' ideas about
how things ought to be; the latter define how things actually are.

A second distinction to note about the central norms that may
define an organization's culture is that norms can vary on two dimensions:
1) the intensity or amount of approval/disapproval attached to an
expectation; and 2) the crystallization or degree of consensus or
consistency with which a norm is shared." (O'Reilly, 1989)

In the previous quote, O'Reilly provides a clear description of what organizational

culture is, how it relates to every member of the organization, and how it can easily be

misunderstood at different levels of the organization. The organization structure, rewards

structure, motivation and morale factors influence the beliefs and expectations. Change

champions model new norms that influence organizational culture. Clearly

understanding the organizational culture is key to influencing change. The norms,

values, and beliefs of the organization members have to be influenced or convinced to

accept the proposed changes if organizational leadership expects to be successful in

implementing change.

"The important point is that there is nothing magical or elusive
about the culture. One has only to be clear about the specific attitudes and
behaviors that are needed, and then to identify the norms or expectations
that promote or impede them." (O'Reilly, 1989)

Supportability policy implementation as a co-equal factor to Cost, Schedule, and

Performance, may require organizational culture understanding and change. There are

two significant ideas to remember when dealing with organizational culture. The first

idea is an understanding that the members of the organization primarily maintain

organizational culture inside their minds. While some organizations may try to document

the prevailing or desired culture, and depict it in some form of symbol, it is shaped and

embraced by the people of the organization every day in every action. Changing the

beliefs inside members' minds may require significant repetitive reinforcing actions or

statements. Creating the Supportability policy may be insufficient to expect change to

occur in favor of desired Supportability outcomes. Members may be inclined to read the

policy statement and believe it to only be a temporary policy letter that will not be

enforced. The leadership has to take extra measures to change the beliefs in the minds of

the members and thereby change the culture. The second idea to remember when dealing

with organizational culture is that it can naturally change continuously in small amounts, but forcibly or intentionally cannot be changed immediately. Culture is a result of many inputs and processes coming together and slightly changing the organization positively or negatively. One action can be remembered and have impact on the culture for a long time. At the same time, deliberate attempts to change culture that lack proper consideration and application can have little to none of the desired effect on the organization.

> "Think carefully about how residual disputes will be resolved and underlying norms enforced. This may mean establishing special procedures for settling disputes that arise. It may also mean relying on the courts. It is preferable to rely on "alternative dispute resolution methods" if possible, to keep conflicts out of court and to encourage all-gain solutions that increase the legitimacy and acceptance of the policy, strategy, or plan and the outcomes of conflict management efforts. (Fisher and Ury, 1981; Susskind and Cruikshank, 1987; Gray, 1989) It is also important to remember that the court of public opinion is likely to be important in reinforcing the norms supporting the new changes.
> Remember that major changes, and even many minor ones, entail changes in the organization's culture…Leaders, managers, and planners should facilitate necessary changes in cultural symbols and artifacts, espoused values, and underlying assumptions, recognizing that it is far easier the change the first two than it is to change the third. Indeed, heavy-handed attempts to change underlying assumptions are more likely to promote resistance and rejection than acceptance." (Bryson, 1995)

Culture is a result that is established over time. It cannot be completely controlled by leadership, as the members of the organization equally influence culture. It is critical to the success of the Supportability policy, that the defense organizations accept this policy as a new way of doing business and adopt the change as a new norm. The organizational culture must be aligned with the Supportability policy, and in turn the policy measures and reward systems will reinforce the espoused organizational culture.

Culture is an important component to maintaining balance and fit within an organization as well as increasing member commitment to the organization.

> "Symbols embody and express an organization's culture--the interwoven pattern of beliefs, values, practices, and artifacts that define for members who they are and how they are to do things. Culture is both a product and a process. As a product, it embodies accumulated wisdom from those who came before us. As a process, it is continually renewed

and re-created as newcomers learn the old ways and eventually become teachers themselves." (Bolman and Deal, 1995)

The supportability policy is the direction setting by our leaders in DOD. Specific to this thesis is the leadership and direction setting initiated by the Department of the Army. The change management theories we have discussed throughout are the managerial throughputs that can facilitate or ease policy implementation if addressed early and effectively. Culture is a result of policies we input (direction setting) and the management techniques we apply as throughputs of the systems model, among other things. Achieving culture intensity is linked to several points previously made: champion, communication, rewards linked to performance where goals reflect Supportability outcomes. Additionally, consensus through structures that enable logisticians full engagement of logistics and other relevant expertise, shifts in power, and increases in credibility improve culture and congruence. Our outputs and outcomes are also results, but our focus here is the culture. Culture significantly determines the behavior of the organization. Culture establishes and shapes over time. (Bryson, 1995) The only means we have to effectively influence or change culture is by using the change management models and tools we have discussed throughout this thesis.

If the culture is properly framed, the resistance to change and rejections of acceptance can be strategically addressed. Culture will not change over night, but if leaders are cognizant that the barrier exists, then the leaders will have a better understanding of the change road that lies ahead, and the need to effectively communicate a common vision to all members of the organization. Cultural changes can be critical inputs to congruency, and should be addressed to assess whether they support the desired changes in the Beckhard and Harris model.

V. CONCLUSIONS AND RECOMMENDATIONS

A. SUMMARY.

In addressing the issue of cost-effectiveness of acquisition programs and weapon systems, there is a lack of Total Cost Visibility of lifetime ownership costs, as illustrated in Blanchard's iceberg model. The Logistics support for any military weapon system or vehicle once fielded comprises the majority of a program's cost over its lifetime of use. The costs grow higher and higher each year due to age of the system and lack of attention to supportability during design and testing. Because these hidden costs of supportability can be as high as 75% of the total life cycle costs, the Army secretariat wrote the policy of Supportability co-equal to cost, schedule, and performance. The Department of the Army created the Supportability policy to respond to a Department of Defense need to identify weapon system total ownership costs and be better managers of defense dollars. We proposed that the Supportability policy would be useful DOD wide. Army wide or DOD wide, the Supportability policy needs implementation assistance for success and obtaining desired results and outcomes.

This thesis analyzed changes required to effectively support the implementation of the new Army acquisition policy of "supportability as a co-equal factor to cost, schedule, and performance. The Beckhard and Harris model presented a change management model to guide transformation and implementation of the Supportability policy. We addressed the policy as an implementation requirement and addressed some of the transformations necessary to facilitate successful implementation to produce positive results, not only for the Army but for the entire Department of Defense.

Twenty-five prominent individuals throughout major systems, operational, and materiel commands were interviewed. The following is a summary of the top ten issues that we identified from the interviews possibly requiring change management attention for successful policy implementation. Recommendations accompany each summarized issue.

B. CONCLUSIONS AND RECOMMENDATIONS.

1. Obtaining and maintaining organzizational fit and balance is critical in achieving intended transformation outcomes and results. In addressing this area we introduced the congruency model by Nadler and Tushman to understand "fit" within the organization. Maintaining fit and balance keeps members of the organization satisfied with the organization and work required. Satisfied members and a balanced organization should minimize focus on resource constraints and keep focus on working effectively within the constraints. Supportability implementation requires implementation that maintains or improves organizational fit and results in the desired results expected from the policy. Failure to acknowledge fit and failure to maintain fit could result implementation failure.

Recommendation. Conduct organizational assessments to identify the organizational factors in existence in each organization applying congruency theory. Likewise, analyze implementation actions for effect and fit with the organization. If the organization fit factors are not seen in the vision of the desired future state of the organization, then implementation efforts may be blindly coordinated.

2. Alignment of rewards and incentives facing program managers should improve implementation of Supportability policy. Program managers reward subordinate performance that contributes to the program manager's definition of success, which is further defined by the perception of what he/she is rewarded for.

Recommendation. Create rewards and incentives, both individual and team oriented, that will create a desire to achieve greater Supportability factors in acquisition programs and products. Rewards directed towards meaningful achievements must avoid fascination with easy to see or measure criteria. Team rewards and shared responsibility will aid the reward system in refraining from rewarding obvious and individual behaviors. Avoid hypocrisy in the reward system at all times to make the supportability policy implementation successful. The stated reward system builds expectations in organization and team members. If work performed does not result in expected reward from the stated reward system, confidence in the organization's commitment to Supportability will decline.

3. **Understanding the structures, the required communication, coordination, control, integration, and political processes that relate to each particular structure and their influence on organization culture and context are significant to implementation strategy.** Organizational structures vary in DOD. Functional, work flow group, and matrix structures are found within the DOD acquisition community. Processes are key to keeping members in the organization fitting with the structure and other organizational factors (i.e., technical structure, culture, rewards structure). Functional structures will rely heavily on coordination processes. Work flow groups and Integrated Product Teams will rely more on integration processes. Matrix organizations will require both coordination and integration processes as well as a third critical political process. Incorporating implementation strategy via the right processes relative to the type of structure is key to maintaining congruence and success of the policy.

        Recommendation. Analyze organizational structure of our organizations for effective structure design given the tasks and work desired of the organization. The organization structure must agree with leaders' vision of the organization at the desired future state following transformation. Also analyze effective use of processes by managers and leaders given an agreed upon structure, and incorporate Supportability implementation measures through techniques that use the appropriate processes for each type of organization.

4. **Supportability implementation requires the support of a power base strong enough to measure up to opposing power bases.** Power bases within the organization exist for various reasons. The important understanding with regard to power bases is whether the bases support or oppose the leadership and the desired change. The interviews conducted, and the creation of the Supportability policy suggested that logisticians may be lacking sufficient power base to keep Supportability factors at the forefront of every acquisition program along with Cost, Schedule, and Performance.

        Recommend logisticians as a professional organization increase their power base in organizations by increasing professional knowledge and expertise through continued education, professional certification, and the creation of a professional Logistics code in

government service labor classifications. The present career progression of a government civilian from any administrative classification into a position of a logistician is insufficient for creating a power base that will equal other power bases in DOD organizations.

5. Effective communication in change management is critical to achieve the desired changes and outcomes of Supportability policy implementation. As McCarthy stated, "a mediocre transition plan communicated well [will have a greater chance of success] than a brilliant transition plan poorly communicated." The communication plan is an important tool for the transition plan and the process of determining "how to get there from here" on the Beckhard and Harris Change Management process map. The communication plan needs to carefully select timing, method, and language of communication to organization members and stakeholders to ensure the message sent matches the intended message received.

      Recommendation. Develop a communication plan that supports a Supportability implementation plan and incorporates careful thought into audience, message structure, communication techniques, repetition, and consistency. The communication plan needs to be aligned with the plan developed to "get there from here," in the Beckhard and Harris model.

6. Supportability policy effectiveness requires measures to create accountability. The past performance of acquisition programs resulted in cost overruns possibly due to a lack of control systems and a lack of consensus on usable measures. A common standard will add meaning to results.

      Recommendation. Service leaders must establish a control system to review programs for cost performance and Supportability results using a common agreed measure. An audit process with common measures creates a control mechanism that can be tied to reward systems, incorporated into budget processes, and supports Supportability implementation and desired results.

7. A Supportability champion is necessary to keep the Supportability policy a priority. Leaders must be dedicated to participate actively in the change themselves. The leaders send signals through the rest of the organization that show commitment or a lack of commitment to the spoken changes.

      Recommendation. DOD implementation of the Supportability policy requires an empowered champion be identified at the DOD or Secretary of Defense level. The Supportability champion needs to be someone with sufficient authority to preside over all the services, and remain in position long enough to see the change process to completion. The change champion needs to be directly involved and incorporated into the communication plan previously discussed.

8. Motivation and morale issues may be limiting the productivity and effectiveness of the acquisition workforce. Motivation is driven by factors that initiate, direct, and sustain human behavior over time. Motivator factors are characteristics of the job that influence the amount of satisfaction experienced at work. If motivation and motivator factors are ineffective in creating worker satisfaction then productivity will be low, new hiring may be difficult, and other problems may arise.

      Recommendation. Assess motivator factors currently used in the acquisition community and DOD organizations for effectiveness and worker satisfaction. Upon identifying what is motivating workers and what is depressing workers, incorporate Supportability implementation by connecting it to the motivator factors. Create rewards and incentives that are desirable to workers, and make the rewards and incentives attainable through adherence of the Supportability policy and producing the desired results of the policy. Assess the motivator factors for fit within the organization and congruence with the desired end state. Ensure they contribute to the effort of "getting there from here," and not moving away from the desired direction for the organization.

9. Credibility within the acquisition community and its stakeholders, and within acquisition programs needs to increase. Logisticians may be lacking credibility with their counterparts on acquisition programs or in systems commands. Additionally, due to past program cost overruns there may be a lack of credibility with acquisition

proponents and congressional stakeholders. Credibility can be assessed in terms of expertise, trustworthiness, and consistency between words and actions. Sharing power and collective accountability may be a means to create equal credit for success on programs, which can increase everyone's credibility at the same time. Success over time of programs should increase consistency of performance in the eyes of Congress.

      Recommendation. Logisticians (responsible for Supportability factors) must strengthen their professional credentials that warrant the title of experts. Create a system of collective accountability on acquisition programs that will benefit everyone when the program is successful. Reward the program participants collectively for the presence of Supportability factors that will increase system performance and keep total ownership costs predictable and acceptable. This will increase collective efforts, build credibility over time, prevent hidden agendas from becoming a detractor from trustworthiness and consistency between words and actions, and finally aid in Supportability implementation.

      10. Culture is an important component to maintaining balance and fit within an organization as well as increasing member commitment to the organization. The change management theory presented by Beckhard and Harris and the congruency theory presented by Nadler and Tushman can facilitate or ease policy implementation if addressed early and effectively. Culture is a result of policies we input and the management techniques we apply as throughputs of the systems model. Culture significantly determines the behavior of the organization and establishes itself over time. The only means we have to effectively influence or change culture is by using the change management model and tools we have discussed throughout the thesis.

      Recommendation. Leaders must be aware of their organization's culture. The behaviors and the organizational culture need to be matched against the desired results intended from the Supportability policy and the desired future state of the organization presented in the Beckhard and Harris model. Without a culture that is supportive and receptive to leadership's input and requests for change, all unintended consequences may be the only outcome

The above issues are recommendations that suggest there is more to implementing policy than just issuing one. There is material and information in this analysis to draw conclusions pertinent to this study and be considered for policy implementation, change management and long-term organization success through fit and balance.

C. SUGGESTED TOPICS FOR FURTHER RESEARCH

Just as acquisition is the tip of the iceberg, so is policy effectiveness. Our research recommendations focus on those topics most likely to pay dividends to solving the problem of our current aging systems have revealed, and serving the total cost identification of future programs. Some of the additional areas relative to DOD interests in this area are the following:

- If supportability measures are established, then a control system is needed to measure Supportability effectiveness in programs. Recommend further research involve methods to control and use of resulting information.

- Should the Program Manager be held fully accountable for these high cost overruns to the point of legal action? Should the accountability be shared by the entire team? Should Program Managers and program members become disassociated with a program after two, three, or four years when the program is going to continue for twenty or thirty years?

- There are legitimate "gripes" within our organizations that were revealed during the interview process. An analysis of the proper feedback system may assist management in hearing the complaints that may be symptoms of larger problems or may be addressing a problem unidentified up to that point.

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